REPORT RESUMES

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PROCEEDINGS OF THE NEW YORK STATE CONVOCATION ON EDUCATIONAL COMMUNICATIONS (ALBANY, NOVEMBER 20-22, 1963).

BY- HUBBARD, RICHARD D.
NEW YORK STATE EDUCATION DEPT., ALBANY
NEW YORK STATE AUDIO VISUAL COUNCIL, EAST MEADOW
NEW YORK STATE EDUCATIONAL RADIO AND TV ASSN.

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THIS SUMMARY INCLUDES 43 OF THE PRESENTATIONS MADE DURING THE CONVOCATION, GROUPED UNDER THESE HEADINGS--APPRAISAL OF MEDIA AND MATERIALS, EDUCATIONAL TELEVISION, ELECTRONIC CLASSROOMS, INSTRUCTIONAL FILMS, PROGRAMED INSTRUCTION AND TEACHING MACHINES, AND MISCELLANEOUS EDUCATIONAL COMMUNICATIONS MEDIA-MATERIALS. A LIST OF PARTICIPANTS CONCLUDES THE REPORT. (MS)

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educational communications convocation proceedings

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
DIVISION OF EDUCATIONAL COMMUNICATIONS
ALBANY / 1964

EDUCATIONAL COMMUNICATIONS

1963-64

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Proceedings of the New York State Convocation on Educational Communications

Sponsored by

Division of Educational Communications
New York State Education Department

in cooperation with

New York State Audio-Visual Council

and

New York State Educational Radio and Television Association

The University of the State of New York
The State Education Department
Albany, 1964

EM 005 384

THE UNIVERSITY OF THE STATE OF NEW YORK

Regents of the University (with years when terms expire)

Edgar W. Couper, A.B., LL.D., L.H.D., Chancellor, Binghamton, 1968
Thad L. Collum, C.E., Vice-Chancellor, Syracuse, 1967
Alexander J. Allan, Jr., LL.D., Litt.D., Troy, 1978
George L. Hubbell, Jr., A.B., LL.B., LL.D., Litt.D., Garden City, 1966
Charles W. Millard, Jr., A.B., Buffalo, 1973
Everett J. Penny, B.C.S., D.C.S., White Plains, 1970
Carl H. Pforzheimer, Jr., A.B., M.B.A., D.C.S., Purchase, 1972
Edward M. M. Warburg, B.S., L.H.D., New York, 1975
J. Carlton Corwith, B.S., Water Mill, 1971
Joseph W. McGovern, A.B., LL.B., L.H.D., LL.D., New York, 1969
Allen D. Marshall, A.B., LL.D., Scotia, 1965
Joseph T. King, A.B., LL.B., Queens, 1977
Joseph C. Indelicato, M.D., Brooklyn, 1974
Mrs. Helen B. Power, A.B., Rochester, 1976

President of the University and Commissioner of Education
James E. Allen, Jr.

Deputy Commissioner of Education
Ewald B. Nyquist

Associate Commissioner for Cultural Education and Special Services
Hugh M. Flick

Director, Division of Educational Communications
Lee E. Campion

Chief, Bureau of Classroom Communications
Loran C. Twyford, Jr.

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FOREWORD

The first EDUCATIONAL COMMUNICATIONS CONVOCATION was held in Albany from November 20 to 22, 1963. The meeting was jointly sponsored by the New York State Education Department's Division of Educational Communications, New York Audiovisual Council, and New York State Educational Radio and Television Association.

Nearly 400 persons attended. A total of 82 research papers and demonstrations reporting the latest developments in the communications area were given. Several Education Department personnel and other specialists from the northeastern states gave presentations on topics ranging from television to teaching machines. There were many highlights of the three-day meeting. John Everitt, Vice President, Encyclopaedia Britannica Press, Inc., gave the keynote address, "Challenge of Educational Communications for the Improvement of Instruction." The Thursday evening banquet featured C. R. Carpenter's talk on "The Sciences of Learning and the Technology of Education" plus the film premier of "Instructional Television at Penn State, 1954-1963." Another speaker at the banquet was Lee E. Campion, Director of the New York State Division of Educational Communications. He described "The Department's Program in Educational Communications." All three of the speeches are reported in full in the section called GENERAL SESSIONS.

Other presentations during the Convocation are included in this summary and are categorized in the following areas: Appraisal of Media and Materials, Educational Television, Electronic Classrooms, Instructional Films, Programed Instruction and Teaching Machines, and Miscellaneous Educational Communications Media-Materials. A LIST OF PARTICIPANTS concludes the report. Not all speeches listed on the program appear in detail as many were of a demonstration nature. Also, some manuscripts were submitted too late to be included.

This Convocation Summary was deemed necessary and valuable as each participant could not attend all the concurrent sessions. The joint sponsorship of this meeting demonstrates the cooperation among organizations interested in the educational communications field. The two persons who planned and coordinated the Convocation are Loran C. Twyford, Jr., Chief of the Bureau of Classroom Communications, New York State Division of Educational Communications; and Catherine M. Bailey, Supervisor of Audiovisual Instruction for the Troy Public Schools. Richard D. Hubbard, Associate in Educational Communications, edited the publication.

Communications Convocation
Albany, New York

November 20-22, 1963

Division of Educational Communications
New York State Education Department

in cooperation with

New York Audio-Visual Council
and
New York State Educational Radio and Television Association

Wednesday
November 20

8:30 - 9:30 a.m.	Registration, Chancellors Hall Foyer, State Education Building, Albany Division of Educational Communications offices on tenth floor of new wing will be open to visitors during registration period.
9:30 a.m.	OPENING SESSION, CHANCELLORS HALL, EDUCATION BUILDING Chairman of morning session - Sherwin Swartout, President of New York Audio-Visual Council Welcome by Allan Bradley Executive Assistant to the Commissioner of Education
9:45 a.m.	Introduction of Guests
10:00 a.m.	Keynote Speaker "Challenge of Educational Communications for the Improvement of Instruction" Maurice Mitchell, President, Encyclopaedia Britannica, Inc.
11:00 a.m.	The New York State Education Department Museum on the fifth floor of the Education Building is open for visitors. A large number of school children visit this museum annually. Albany, Capital City, is the title of an outstanding exhibit to be seen in the Capitol Building directly across from Chancellors Hall.

Wednesday November 20	CONCURRENT SESSIONS, BRUBACHER HALL, STATE UNIVERSITY OF NEW YORK, ALBANY
12:15 - 1:30 p.m.	Special Interest Lunch Tables - Main Dining Room Persons interested in discussing a field of educational communications will eat together to discuss the topic.
1:30 - 2:50 p.m.	Concurrent Sessions - Room Chairmen Lower Lounge - Alfred Moses Game Room - Dorothy Currie Ingle Room - George Forbes Dining Room - Ursula Moran
Lower Lounge	State Film Utilization Survey Plans for Improved Distribution and Use David Rees - State Education Department State contract for projectors, tape recorders, video tape David Rees - State Education Department
Game Room	Research preview: How to Double Learning with A-V Robert Brown - State Education Department Cultural Enrichment Project Robert Brown - Grace Lacy - State Education Department
Ingle Room	High School Instructional Materials Center John Battram - White Plains Fitting an Audio-Visual Program to the Small School Allen Stripp - Old Forge
Dining Room	Film premier - Instructional TV at Penn State 1954-1963
2:50 - 4:10 p.m.	
Ingle Room	Language Laboratories Specifications Equipment Tests State Survey David Crossman - State Education Department Title III Developments Walter Schoenborn - State Education Department

Wednesday
November 20

2:50 - 4:10 p.m.	
Dining Room	Local Films Made Possible by Local Industries William Ryan - Gloversville
	8mm Film Production at Hamburg Central School Louis Brown - Hamburg
Game Room	Sound Slide Presentations James Meagher - Penfield
	Visual Review of Team Teaching David Rees - State Education Department
Lower Lounge	Study of Regional Educational Communications Centers Thomas Carey - Jericho, Long Island
	Systems Approach to Teaching Richard Hubbard - State Education Department
4:10 - 5:00 p.m. Lower Lounge	New York State Audio-Visual Council Business Meeting Certification of Educational Communications Personnel
5:00 - 8:00 p.m.	DAVI Convention Committee and Subcommittee Planning Meetings - DeWitt Clinton Hotel
6:00 - 8:00 p.m.	Dinner not scheduled The College and University Group will meet at the DeWitt Clinton Hotel. The chairman will be Eugene Steffen.
	Other groups are urged to plan meetings during this period.
8:00 - 10:00 p.m.	Educational Communications Demonstrations - DeWitt Clinton Hotel
	Room Chairmen South Studio - Dorothy Currie Third Floor Library - Carl Baumback
South Studio	Role of the Humanities in Public Education William Bartram - Educational Consultant, Encyclopaedia Britannica Films

Wednesday
November 20

8:00 - 10:00 p.m.

South Studio

Modern Arithmetic
Joseph Dickman - Encyclopedia Britannica Press, Chicago

Demonstration of Edex Communication System

New Classroom Technological Devices
Donald Laviana, Westinghouse Electric Corp., Pittsburgh 35, Pennsylvania

Third Floor Library

Overhead Transparency Lifter
Jack Britton, American Optical Co., Buffalo

K & E Transparency and Master Books
George C. Laurson - Ray Supply, Inc., Glens Falls

Instructo Flannel Boards, Transparencies and Magnetic Boards
Ronald Kaplan - Instructo Products Co., Philadelphia, Pennsylvania

Thermofax Visual Communication System
Charles Hyser, Minnesota Mining and Manufacturing Co.

9:00 - 10:00 p.m.

The Executive Meeting for the New York State Audio-Visual Council will be held in the New York Audio-Visual Council Suite, DeWitt Clinton Hotel.

Thursday
November 21

Registration 8:30 - 4:30 for NYAVC and NYSERTA

9:00 - 10:20 a.m.

CONCURRENT SESSIONS, BRUBACHER HALL, STATE UNIVERSITY OF NEW YORK, ALBANY

Room Chairmen
Ingle Room - Olwyn O'Connor
Dining Room - John McCagg
Lower Lounge - George Forbes
Game Room - Charles Drago

Ingle Room

Report on Television Council Activities
Carl Balson - State Education Department

Federal Funds for Educational Television
Bernarr Cooper - State Education Department

Thursday
November 21

9:00 - 10:20 a.m.

Dining Room
ETV for Educators (with focus on easy, enjoyable, and exploratory ways of getting educators to appreciate the potentials of ETV) - Phil Lange - Teachers College, Columbia - Sanford Levene - Bronxville Public Schools

Demonstration of New Television Set Available Under State Contract
William Humphrey - State Education Department

Lower Lounge
Utilization Patterns in Programed Instruction'
William Ryan - State Education Department

Enrichment Activities and Scheduling of Programed Materials
William Ryan - State Education Department
C. R. Carpenter - Pennsylvania State University

Game Room
Self Instruction in the Operation of Audio-Visual Equipment
Gerald Mars - Syracuse University
Maxine Haleff - Hunter College

Teaching Machines and Programed Learning in Ithaca Schools
James Mason - Ed Moy - Ithaca

10:20 - 10:40 a.m. Coffee available

10:40 - 12:00 a.m. Concurrent sessions

Ingle Room
Use of Educational Television for Language Instruction
Stephen Feit - Dolores Stein - Valley Stream

Television as a Means of Film Distribution
Peter Greenleaf - New York City

Game Room
2,500 MC Closed-Circuit Television at Plainedge
Dalton Levy - Plainedge

What 2,500 MC Microwave Transmission Means for In-School Television
Raymond Graf - State Education Department

Lower Lounge
Commercially Available Overhead Transparencies
George Wiesner - State Education Department

Basic Graphic Materials and Equipment for Every School
Display Materials Available on Loan
George Wiesner - State Education Department

Thursday
November 21

10:40 - 12:00 a.m.
Dining Room Multi-Media Public Information Program
Herb Jensen - Greenwich, Connecticut

Tape-Slide Budget Presentations
Warren Russell - Kingston

12:15 - 1:30 p.m. Special interest lunch tables

1:30 - 2:50 p.m. Concurrent sessions

Room Chairmen
Dining Room - John McCagg
Game Room - Toni Gregg
Ingle Room - Alfred Moses
Lower Lounge - Ursula Moran

Dining Room An Administrative Guide for Educational TV
Dr. Ray Kuipers - Clarion, Pennsylvania

Television Utilization in New York City Channel 11 (13) Area by Public, Private, and Parochial Schools
Kenneth Lenihan - Bureau of Applied Social Research

Game Room Reports of Local Assistance TV Projects in State
Raymond Graf - State Education Department

Closed-Circuit Television at Rochester High School
Art Cowdery - Rochester

Ingle Room Using Radio in the Elementary Classroom
Empire State FM School of the Air
Coy Ludwig - Syracuse

Demonstration of Teleteaching by Closed Circuit in Nine Central Schools
Helen McDivitt - South Kortright

Lower Lounge New York City's Audio-Visual Development and Appraisal Center (AVDAC)
Edward Bernard - New York City

New Media In Training Teachers
Morris Freedman - New York City

Thursday
November 21

2:50 - 4:10 p.m. Concurrent sessions

Game Room
Statewide System of Educational Television
Lee Campion - State Education Department

Inter-Institutional Television
Bernarr Cooper - State Education Department

Ingle Room
Television Equipment Consultation Services
Raymond Graf - William Humphrey - State Education Department

Tapes and Kinescopes for School and Station Use
Carl Balson - State Education Department - R. Spinks

Dining Room
"Kinestrip" for Video Recording
Herman London - Hunter College

Recipes for Learning
Frank Julio - Wantagh

Lower Lounge
Report on a Classroom Responder
David Crossman - State Education Department

New Library of Free Educational Communications Films
David Rees - State Education Department

4:10 - 6:45 p.m. DAVI Convention Committee and Subcommittee Planning Meetings

7:15 - 10:00 p.m. Banquet - Walden Hall
Chairman - Halas Jackim, President, New York Educational Radio and Television Association
Introduction of Guests

"The Department's Program in Educational Communications"
Lee Campion - Director, Division of Educational Communications

Banquet Speaker
"The Sciences of Learning and the Technology of Education"
C. R. Carpenter, Pennsylvania State University
Film Premier - Instructional Television at Penn State 1954-1963

Friday
November 22

9:00 - 10:20 a.m. CONCURRENT SESSIONS, BRUBACHER HALL, STATE UNIVERSITY OF NEW YORK, ALBANY

Room Chairmen
Game Room - Eugene Steffen
Dining Room - Carl Baumback
Ingle Room - Toni Gregg
Lower Lounge - Charles Drago

Game Room
Status of 8mm Films in Education
David Rees - State Education Department

Technicolor Corporation
J. Maurer Developments, Inc.
Fairchild Camera & Instrument Co.

Dining Room
New York City and New York State Joint Language Laboratory Research Study

Sarah Lorge and Edward Bernard - New York City

Ingle Room
Problems and Projects in Equipment Appraisal
Edward Golub - New York City

Helping Teachers to Utilize Television
Kathryn Hearle - New York City

Lower Lounge
Teaching Teachers to "Program"
Joseph Millman - New York City

Teacher-Controlled Film Service
Henry Oueen - New York City

10:40 - 12:00 a.m. Concurrent sessions

Lower Lounge
State Program for Review of Educational Communications Materials
William Henry - State Education Department

Problems and Projects in Materials Appraisal
Bertha Odessky - New York City

Dining Room
State Library Film Program
Jack Spear - State Education Department

State Commerce Department Film Library
Fred Rella, New York State Department of Commerce

Friday
November 22

10:40 - 12:00 a.m.

Ingle Room	State Museum Services Available to the State's Schools Michael Darcy - State Education Department
	Film Production Roles and Projects in a Metropolitan City Clifford Ettinger - New York City
Game Room	Closed-Circuit Television in Science and Engineering Education William Millard - Rensselaer Polytechnic Institute, Troy
	Television Equipment Loan and Demonstration Program Raymond Graf - William Humphrey - State Education Department
1·00 - 5:00 p.m.	The State Education Department, Division of Educational Communications personnel will be on hand to assist those who wish to pursue particular problems or interests. Albany State, Rensselaer Polytechnic Institute, and WMHT Educational Television Station will also have open house for those interested in visiting these institutions.

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GENERAL SESSIONS

THE DEPARTMENT'S PROGRAM IN EDUCATIONAL COMMUNICATIONS

Lee E. Campion, Director, Division of Educational Communications
N.Y.S. Education Department

When traveling for the NEA, I had the opportunity to attend many conferences, such as this Convocation, in many states: local audio-visual conferences, state audio-visual conferences, and state television conferences. When reviewing these and thinking about this meeting today I think New York has something to be especially proud of. I do not know of any conference I have attended in our field of communications which has had the leadership, the kind of program, and the kind of activities demonstrated here today. And I feel like you,that I was a spectator. The planning was handled by Larry Twyford and his Bureau personnel. It was also a pleasure for me to watch the members of our staff in operation. I do not get a chance to see this too often; not as often as I would like and it was most interesting for me to hear your reactions to them.

The role of the Division of Educational Communications can be defined simply because we have a publication which explains the Division's four objectives. "(1) It collects original photographic negatives from many fields of study and from these prepares and organizes an appropriate classification, lantern slides, and photographic prints. (2) It does the work of circulating these slides and photographs as temporary loans for educational purposes. (3) It receives and passes upon applications from the schools to the state for the approval of projection apparatus and of reproductions of standard works of art with a view to the making of apportionment of money towards the purchase of the same. (4) It endeavors to determine the educational value of visual aids to instruction, and to make suggestions for their use whenever the opportunity is offered."

This is an official publication of our Division dated January, 1926, and was furnished to me by Franklin Mathewson. It's a real pleasure to see this because I think it does point out that we have made some progress. We now have a Division not of Visual Education Instruction but a Division of Educational Communications.

I feel like the nun who had joined the Convent and had taken a vow of silence, and after five years she was called in by the Monseigneur. He said, "For keeping your vow you are to be rewarded. You may speak one sentence. What is your one sentence? She said, "The food is lousy." Five years went by and the nun was called back in. She kept her vow and was not to be rewarded with two sentences. She said, "The food is still lousy and my bed is hard." Another five years went by and the Monseigneur called her in. He said, "You have kept your vow; you may now speak three sentences." She said, "The food is still lousy. My bed is still hard. And I want to get out." The Monseigneur looked at her and said, "I'm not a bit surprised. Ever since you got in here all you've done is complain, complain, complain." Almost one year ago we made a vow or a promise to attempt to provide leadership in the state in the field of communications. I spoke at different meetings at this time to both the television people of the state and to the audio visual people of the state. It was stated at that time that we had ideas for improvement and for reorganization. Many of the things that we promised have come true.

One of the first things the Division faced, was a reorganization proposal on the part of the Department that would have split our Division, TV from audio-visual. The Division reaffirmed the idea that communication media should be unified and that communication media should work at all levels of instruction. The Division still holds to this concept; that all media should be represented in the Division of Educational Communications at all levels of education. I think, too, that over the years we have given leadership. I believe people like Warren Russell and the award you gave him represents leadership in the field.

The Division's reorganization plan includes a Bureau of Mass Communications. Under this Bureau there are two sections, a broadcast section and a technical support section. In a plan to the Regents, a third section has been submitted which has been approved by a committee of Regents. It is a section dealing with mass communication media and materials. There is no staff or money, at the present time. Data processing, film courses, and other materials in mass technology will be handled by this new section. In the technical support section we are developing the concept that technicians are going to be needed on school staffs; that professional people cannot be expected to be the technicians, the operators of equipment, the people who make the material, and the people who do the distribution of the materials. The Division's technical staff is getting called on more and more by people in the Department. In fact one of our problems is that they are called on to the extent that there is not enough time to do the work of the Division.

As to the Bureau of Classroom Communications, I think you have seen the kind of work it can provide in the way of consultant services. I think Larry Twyford has demonstrated this in the work he and his staff have done in providing services for this meeting. New directions have been taken in the Bureau of Classroom Communications, also. We have added additional staff; people like Dick Hubbard who is really coming home to New York to be our curriculum implementer, our contact between curriculum and our Division. We are attempting to work closer with the various offices in the Department such as curriculum, research, and school buildings and grounds. I believe excellent progress has been made in this direction. The other week a joint meeting was held with the higher education people. Sol Cornberg came in to talk about new designs for space for communications. We are interested in expanding this kind of work within our own Department. Bill Henry joined us to head up a special evaluation project to help find out how assistance can be given in the evaluation of materials. The vast amounts of materials that go into the schools is tremendous. How can we assist you in developing a program that can come up with quality, offer recommendations and directions, and provide guidelines for purchase?

In the Bureau of Classroom Communications the men have to specialize. They have specific assignments. Dave Crossman for example works in the area of electronic classrooms and he also has to take on the gigantic task of school building design. While working in this area he has consulted with Mamaroneck and Mt. Kisco.

In the area of curriculum the Division began a culture project which is called CUE. Grace Lacy and Bob Brown are working in this area. It is our intent to study new concepts of packaged materials. What can be done when you infiltrate or integrate within an existing curriculum, packages of material carefully worked out to fit the curriculum with guides for the teachers to use?

Dave Rees has the problem area regarding state contracts for audio-visual equipment and materials. He is also working in the area of the educational film both 16mm and 8mm. Dave has completed his study of the status of the educational film in New York which will soon be published under the title, "Films for Education."

Bill Ryan specializes in the field of programed instruction. He completed his first working paper on a handbook in the field of programed instruction. This will soon be published.

Dave Crossman has worked with the U.S. Office of Education on a survey of electronic classrooms in foreign language laboratories. This will soon be reported.

Bob Hilliard in television--higher education has made a study on ETV facilities in higher education. It is at the printer and will be released in February.

We are trying to find out where communications stand; what the situation is like in this state. It is amazing how little we know about some communication activities. That is why I believe a Convocation like this is so vital and necessary.

I believe we have quite a unique plan for state-wide television. I know of no other state who has approached it quite in the way we have approached it. The Division is working to develop all types of ETV systems: systems for the community, open circuit for general education, and 2500 megacycle systems for higher education and the public schools. All are producing materials that will go into a video-tape library. A duplicating service will extend these materials throughout the state. The emphasis must be on quality. We will try to answer some of the criticisms of mediocracy in production by concentrating on fewer programs with more quality. We have two video tape recorders on order. They will be in the Division in February and we will start experimenting with the tape duplicating service in the spring of '64.

Dave Rees has proposed a plan for phase one of our film program to extend the number of regional film libraries through our Boards of Cooperative Educational Services. Let me add that this is only phase one.

The Bureau of Mass Communications consists of Bernarr Cooper as chief, with Ray Graf, Bill Humphrey, Joshua Roach and Carl Balson. This Bureau assists the rural schools in getting films.

We have taken a little of seed money in our technology budget and approached several school districts. Ira Singer from Erie County Supervisory District #1 has a research-curriculum center. To develop what we call a teaching wall (you can read about it in the next issue of DAVI) and to help him in the forming of a graphics center; the Division has provided Dr. Singer with a small grant.

I again approach the idea that we are making another promise to you, a promise to provide leadership. I think I can well illustrate this with a story I never get tired of telling. It illustrates our role in serving you. In the City of Baltimore they had a rat problem. To solve this rat problem they brought in cats, and soon their rat problem was gone. Now they had a cat problem. Cats were all over the City of Baltimore. They didn't know exactly what to do about it so they went to the city government and received a grant. They went to the state government and received another grant. They made some films on the habits of cats. They distributed these. They spoke to PTA's and civic groups. They got out their visuals and maps and started pinpointing where the trouble started. It all centered around a single spot. They went there and sure enough there was a great big tom cat. Well, they picked him up and took him back and to solve their problem they were going to do away with him. But all of a sudden they were flooded with mail. The daughters of the American Tom Cat Society, the National Society for the prevention of cruelty to tom cats, wrote and they had all kinds of publicity saying you can't do this. This is cruel. You can't treat animals this way. So like educators, they revised the animal or produced a second edition and let him go. Everybody was happy for awhile. But it didn't solve their problem. In fact it got worse. There were more cats. Once again the citizens took action. They got Congress to pass legislation for federal grants; they asked the Ford Foundation to contribute money, they produced films. Once again they got out their maps, put up their pins only to learn it all centered around the same spot. They went to the same location and sure enough there was that same tom cat. He had become a consultant! So in conclusion we will make another vow, not of silence, but one of service and hope we can provide you with the kind of leadership you expect from us.

THE SCIENCES OF LEARNING AND THE TECHNOLOGY OF EDUCATION

C.R. Carpenter, Pennsylvania State University

The topic which I have selected was chosen weeks ago and perhaps may seem pedantic as it really is--"The Sciences of Learning and the Technology of Education." I am really concerned with what we could say that would be significant and have implications for this very, very complicated and difficult problem of translating that which we know into an active educational technology.

You know as well as I do the varied efficacies of different modes of communication and that the verbal mode is particularly elusive. It is elusive because of the complexities of the communications processes. It is elusive because we have not mastered the transformation that must take place from one domain to another in the areas of abstraction. But in a sense we are stuck with it, and one might try to imagine that unrealistic world where verbal communication does not exist. I think it would be a particularly good exercise for those of us who are media-fixiated.

There are roles for different modes of communications. One of our principle problems is to determine the place for the right modes and types of expression which provoke action and meaning. I would plead that we face up to the consideration of where different types of communications fit into the total matrix, and how to bring influence to bear in the right direction for the right objectives using whatever mode, media, or condition might be required.

In the introduction I would also suggest the possibility that one of the great problems with which you and I are very much concerned is the problem of adaptive change in education. In this manuscript I have underlined adaptive change, appropriate change and important change, not just any change. How do we instigate it? How do we regulate it? How do we control it for deserving purposes?

I would suggest that there is a certain rightness about the present for significant change in education. As my subscription to the title showed, I am of a pessimistic mood. I am not very optimistic and I could get very cynical about the degrees and extent of significant change that is occurring in education. For instance, recently in the International Congress of Psychology I estimated that all of these gadgets with which we are concerned, all of the media, however well developed, probably are affecting only about 1% of the total educational enterprise in this country. You can argue with that; I hope you do. If it is more, let me know; if it is less, don't tell me. I am discouraged enough by it as it is.

I do believe that there has been a change of the dimensions of a revolution in the field of communications. From this we should get a lift, an excitement and encouragement. We should ask the question, "What does this revolution in communication mean for education?". Education is a different domain. My hypothesis is that you cannot have the changes occur that have occured in the communications field without the stress becoming so great that inevitably, due to the forces of contrasts, the configuration of education is influenced.

"What is your role in instigating adaptive change?" I suggest that there are certain things that we can do to solidify the incrustations which already exist, and to some of which we are very strongly committed. By contrast there are certain possibilities for actions that have tremendous leverage for introducing adaptive change. Probably these areas are not of a specific variety. They are more generic; they are more fundamental. Perhaps they involve principally the theory of education or the theory of learning and ways in which these can be brought to bear.

There is the problem of the state of the science of learning and since I have already written too extensively on this question I shall simply go over the outline. I think we could make a good case for the fact that there is a limited but dependable and applicable body of information in the field of learning that can be transformed through various levels of abstraction to levels of application. We should get on with the job because there is no other basis that is more dependable and sound than that basis of dependable fact in the area of human learning. Having said that, I would suggest that this information is entirely inadequate. It is an area that is grossly neglected. Too many of us presume that we can draw the conclusions about some of the most complicated biological life science phenomenon that exists--human learning, retention and memory--without knowing the facts. If we tried to behave like this in certain other areas of the physical sciences, where we had to test it out in the technologies of engineering, we would soon find the inadequacies of our procedure.

It is encouraging that we can talk about the science of learning. It is encouraging to me that we are becoming aware of the boundaries and limitations of the field in which we operate. We are becoming less receptive and more allergic to the prophets and the messiahs in the educational field. We still have the discipline, the religion of programing, Brunnerism, etc., but nevertheless we are skeptical. We are aware of the limitations. This is a good and healthy sign. We are becoming aware of the requirements for advancement. There are a great many people who are beginning to be convinced about what is required. They are saying this to the U.S. Office of Education, the National Science Foundation. "Keep your little project funds. We don't want them. They won't do the job. We can't handle them. They are too much trouble. There is too much loss in building up a small project. If you can't do something that is more in line with the requirements for solving the problem we will have to work out a new method."

In a study that I made two years ago, "The Assessment of a Complement of Learning Research Centers", I suggested in the conclusion that we needed a hundred million dollars invested in the 12 differentiated learning research centers per year until 1965 or 1966, and then increments proportioned to productivity after that time. When this was first presented it was thought to be a grandiose illusion. It is now being talked about as if it were an accepted fact. This just suggests one of the dimensions of the problem. We must begin to think about research centers, specially built and specifically equipped to do the kinds of complex jobs that are involved in research and understanding of complex human learning. This cannot be done with small projects on a short term basis. It cannot be done with people who are trying to do something else. We have to staff them with the test competencies which are available, competencies on a continuing, all-out basis.

I believe we are developing an awareness of the importance and need for communicating scientific knowledge about learning to people who can make the application. This is the interface of science and technology. I am encouraged to find people like Spence, for example, at Iowa who used to say, "If it's a useful fact I am not interested in it." He is now becoming concerned with the significance of his research in relation to school problems.

I am sure that I could identify right now 20 to 25 distinguished outstanding psychologists who at least tolerate the possibility that they could make some contribution to the operation of a school system. This is something that is a bit new. I submit that it is a healthy development.

What is the state of educational technology? There is much misunderstanding about this. When we use the concept "technology", we frequently think of the hardware, the gadgets, the equipment systems, and the instrumentation. The real definition of this term is the "process", the operations involved in taking basic fundamental knowledge and translating it into useful applications. It involves not only the hardware; it involves also the intelligence, the competencies, and the people who are engaged in the operations who make the fundamental knowledge useful and applicable.

This is no small task, and it is not going to be accomplished by little fragments of our industries dealing with the problems of educational technology as a sub-sub-subordinate section of a division. It is not going to be accomplished by part-time people thinking how to convert the fundamental knowledge into practical and useful application. It is going to require the very highest level of thought systems and efforts. It is going to require a concern with the logistics of the resources of education. It will require the very best competencies that we can commend in this country working out various strategies for solving educational problems in an orderly systematic manner. It will involve starting with the requirements that are necessary to solve the problem or do the job rather than starting with limited budgets. The cost factor probably appears in the sixth or seventh stage of planning. It is going to require the complex tactics and art of applying and carrying out educational strategies. I wish that we had time to go into each of these three components of a total planning system to see what it might mean in terms of the very highest level administrative thought.

I would like to make three proposals for groups working on the logistics, strategies and tactics of education; three things that I think are extremely important. One is a group which I would call a "Rand Corporation for Education" in the United States. If you know what the Rand Corporation is you will know what I mean. I will describe it briefly. It essentially consists of a fairly large group of exceedingly competent people in a number of relevant fields who dare to attack problems which have not yet been solved regardless of their magnitude. And I submit that we have problems in education we have not yet solved because of their magnitude. Some of us need to have immunity from the pressures of daily activities to think, to consider, to analyze, to evaluate, to synthesize and to work on these problems at the very highest level.

One of the necessary components that we cannot be without is a very competent collection of the best brains in the country working on the strategies of education. How this is to be applied will be determined later. It is not to be authoritarian. It is to be information-based. It is to face up to the basic facts of education with immunity from the pressures of day to day activity and political interference.

I have already referred to the second proposal. It is a component that we must have and that is a complement of learning research centers.

The third one has to do with establishing and staffing adequate instructional materials production centers. We simply cannot solve the problems of quality which we so glibly say we want, unless this is done. The teacher prepared materials are most often inadequate for very good reasons for which the teacher is not responsible. We simply cannot afford the tremendous duplication that is going on from classroom to classroom, class to class, school to school, college to college, and university to university. We are suffering from a pathology of regionalism, and we have to cure it. I am not suggesting on the other extreme that we go to the pathology of centralism as is the case in France. I am suggesting a series of centers in a state, a county, a region, or a city for bringing together first the spaces, then the equipment, the materials and the people. Thereby courses can be produced and distributed. This is one of the necessary approaches that I think a "Rand Corporation for Education" would find for the improvement of quality and increasing the utility of the best kinds of instructional materials.

What are the barriers to adaptive technological change? In the interest of time I shall simply read them, and make very brief comments. The first is the decision makers and authorities. You and I are pretty far down the totem pole when it comes to making the real determinant decisions about adaptive change in relation to communication technologies in education. We have to find some way of reaching to the level where the crucial decisions are made, whether it is at the Legislature or at the Commissioner's level, or at the level of the National Government, or of the school board. Too often we are operating with great frustrations within limits that are set by prior decisions. They have hemmed us in and we cannot move and we cannot operate effectively.

We need to give very close consideration to the order, timing and plans of action, because it is very crucial that we do the right thing at the right time and the right rate in order to get change introduced.

As a third point I think we have to recognize the extraordinary complexity, the mass that must be moved if adaptive change is to be introduced into educational systems. I hope that we begin to recognize that we are not only introducing transparencies, television, radio, or new instructional patterns. When we introduce a significant adaptive change, the whole system must respond. If it does not, the change that is attempted will be treated as a foreign body and ejected from the organism. This means changes in administration, budget, building, equipment, staffing, and the role that all of us play. I think we will have to appreciate that when we are innovating in education we have to balance risk against probable rather than certain gains. It is this that seems to me to be an inhibitory factor--a barrier--because the risks are frequently better known than the degree of probability of gain. I think that much of the resistance that comes from teachers and faculty in relation to such a threat as television comes from the uncertainty about their future position or role.

I would call to your attention the fact that you cannot introduce these things without adequate public knowledge and supporting public opinion. Therefore, we have to give very careful attention to the question of what kinds of information we disseminate, and I am talking about hard information. I am talking about evidence; I am not talking about propaganda. There is a tremendous amount of the propaganda in our field. It will take longer for the evidence to be accepted, but the strength of the foundation built upon evidence is much more enduring.

We must then face up to the problems of the generality and specificity of research evidence. Two hundred and fifty different experiments have been done comparing closed circuit television or television broadcasts with conventional instruction. I have wondered why this is so, as the basic trends of findings was established six to ten years ago. I think it is because we think of ourselves as being so different that what is done in another person's pasture does not apply in ours. This may be necessary as an introduction technique but it is not justified in terms of rational and practical considerations.

Probably one of the great barriers which we are facing in educational technology and educational communication, is becoming more and more involved with complex equipment. Our good friends in the humanities are simply repulsed by this. I do not know how to overcome this barrier because I like poets, I like musiciens, and I like philosophers. I get a great pleasure from them until I begin to talk about regulating learning, then they become disturbed. Then I talk about organizing and storing information, and they lose interest. When I talk about retrieving information and predicting learning, they are repulsed. Here you have a barrier that I cannot bridge; I am not enough of a humanist. But there is a barrier between the individual who is identified with the humanities and those of us who are engineering, mechanistic, perhaps technological and equipment oriented.

The final great barrier to innovation in education is the multiplicity of our languages and concepts. I have a language. It's my language and a language for my field. I have to use it. I do not communicate with a lot of people in other areas because of a language barrier. I work at a certain level of abstraction. You are in the same situation. How do you transform your language to other languages that those people can understand? More specifically in relation to the topic of this discussion, "How do we transform the formulations about learning, the formulations about growth, intellectual growth and development, from the layers of abstract theory to the levels of useful, practical information?" This is a real problem! It is a communications problem. It is therefore an appropriate problem for us all to consider and try to solve.

EDUCATIONAL COMMUNICATIONS

John Everitt, Encyclopedia Britannica, Press, Chicago

The subject of this presentation is communications particularly relative to academic communication. Most recently I was discussing in Jamaica the subject of communications among porpoises. These animals out in the Atlantic actually do communicate with each other. They have a language; they have a way of understanding each other on quite an abstract level. Consequently, to me this is at the moment quite an interesting subject. Unfortunately, I will not be able to elaborate on it here.

Human communication is quite a different thing. Probably we all started out at some time or other in our past ancestry doing no more than porpoises are doing, which is a kind of grunting to each other and understanding the grunt. Probably the first human communication was between male and female. This grunt did not last very long, but nevertheless, it was probably the first communication.

The second came when they began communicating with their children, and the others around them. In the next step of communication development man became a gregarious animal communicating with himself and with other people. He devised many methods of communicating with himself or with others. One way, certainly, was speech, and speech was probably the first and, I am inclined to think, it will probably be the last really significant development in communications. But in any event, speech was undoubtedly first oral, and then written communication. Pictures soon accompanied speech, then music and finally the demonstrating arts of one kind or another. But the whole purpose of it was in some way or other to gain a communication between what is the thinking of a person with that of another person.

Down through the history of the West we used words in their written form for storing this information or these ideas or these thoughts from one generation to the next and from one individual to the next. What a remarkably glorious thing it must have been to be able to say a word, a sentence, or a thought, in those particular words, in that sentence, in that paragraph, on that page! It was discovered that the person did not have to be in the actual physical presence of another person in order to experience the thought, in order to learn from him, in order to, in some sense, participate in his behalf. This must have been an enormously exciting day when this was first known, when it was first discovered that you could put it down and you could leave it for somebody else.

Once the technique was refined, it was polished over and over again. We have it first in terms of manuscripts, then finally in terms of opinion press. We perfected it to the point where we could take pictures and leave pictures to be looked at and understood by somebody else. We could not only leave the words and the thoughts, we could leave pictures with thoughts and with information and so on.

This very briefly is the way we progressed. Now we actually can leave everything we know to those we will never see. We can put a book on a press and spew out hundreds of thousands of copies of it to be read by people the author has never heard of nor seen. This is the kind of day in which we now live.

Now, what happened to academic communication? Academic communication begins in very much the same way as all other communication did. The earliest classes we know anything about were the classes in the old Rabinical schools and in the Alexanderia Library. These classes consisted of approximately 30 students for each teacher. The teacher read the manuscripts, came in and talked to the students; communicated orally, this student with this teacher. At the end of a term the student was required to give some kind of an indication of what he had learned. The students who listened were finally brought up to the point where they could read the books, they then in turn became teachers of additional students, or teachers only of themselves, or non-teachers out in the world. Nevertheless they transmitted the knowledge they could read and the knowledge they had heard.

Down to the time of the printing press this was what happened. In the Middle Ages the classes were quite similar to those in Rabinical schools--one teacher, 30 students. Today there is one teacher for 30 students. The printing press came in immediately, not only were there books for the teacher but there were books for the students. The scholarly community, the academic community, became the community that read. The word lecture itself was simply a word to indicate that the person doing the lecturing had read. Since Gutenberg, reading has been the basic means of communication. The fact that you must be able to read in order to be a teacher, that you must be able to read in order to be a student, became the first requirement of an education.

Since this time we have had a variety of other means of communication come into our lives. Radio was first and then television. So what did Western man do? He took the enormous electronic marvels, the discoveries of science and developments of technology that had been unheard of and undreamed of for years, and left them for the other side of man's communicating nature, that is his desire to communicate entertainment. These discoveries and developments essentially became the media of entertainment. At the same time, the printed word, behind and between hardened covers, continued to be the way of academic or scholarly communication.

I was at one time a professor of philosophy at Columbia. I had exactly the same prejudice that I am sure every philosopher has--that there is something mysterious about the printed page. There is something mysterious about the page that can have jump out at you ideas that you have never had before, that can insert themselves in your mind in a way that you did not know they could be inserted, and can open up whole new vistas. I am sure that most professors, whether philosophers or not, have had the experience of learning largely through reading. It is understandable, then, that they went along, as did most other educators, with the notion that films were for the purpose of entertaining you, that television and radio were for the purpose of entertaining.

Actually, we had arrived at a wholly different position. We have reached the point in our history when the academic community itself must begin to recognize something they have never recognized before, and that is the media you use to present something to a student or to somebody else in many ways determines what you can present. The physical form you use determines the richness and the breadth of what can be presented. The old text with no illustrations with nothing in it except one style of type, page after page could present very limited concepts. The power of the printed page to present ideas to another person, was greatly enhanced by putting in illustrations. In the Middle Ages it was greatly enhanced by illuminating particular letters along the sides of the manuscripts which gave something more than what the manuscript alone could give. With the printing press, the development of photography, and the development of reproduction methods, we made the book something that it had never been before. The book now could communicate a richness of variety and breadth of experience, of ideas, of fact that could not have been communicated with just page after page of type.

Here we need to realize that the world in which we live and try to transmit ideas and knowledge from one generation to the next requires so much more in the way of a mechanism for transmission than the printed page required. At this point we must bring together all the fabulous marvels that science and technology of the past 50 years have developed into one simple scheme for adademic communication. This is not going to be easy, any more than it was easy for the professors at the Sorbonne to resist the riots that the students and the younger professors had at the time of the introduction of the printed book. Many of these professors maintained that there would be no longer a job for them. Why should a student come and listen to them give a lecture if he could go to a library and read the book? This same fear has been expressed since then to the present time. The different single groups wanted to maintain the status quo for personal or for perhaps erroneous professional reasons. The library and the books did not put anybody out of business. The library and the books became a real and significant part of the total educational experience.

Now, we must bring into being some kind of amalgamation of every means of communication. We have to renew the total educational experience of the child and of the adult. We must take away from the entertainment business the full use of all of these communicating facilities. Can you imagine that now a child sitting in a school here can know instantaneously what is going on in a riot in Africa, or in a speech in Parliament in England? He can know it within the time it is happening, not two days later, not one day later, not six months later. We can present, in our classrooms and with our students, the greatest personalities of our day, people who never would be known to 90% of the students in our various institutions. We can present them, not as myths, not in great biographies, not filtered through the minds of a half a dozen people, but as they really are. We can do this now, and we never could do this before. Yet we do not do it; yet we must do it.

What kind of a classroom should we have in the future? Should we perpetuate the formula one teacher to every 30 pupils? If we do, we will find ourselves going backward rather than forward. We will discover that we have a greatly expanding world of knowledge and we do not have the sense to use the equipment to present this greatly expanding world of knowledge. Examine the kind of class or learning situation we could actually develop right now with present knowledge and materials. We could, right now, put much more responsibility for learning on the student. Right now, we could take much of the burden from the teacher of presenting certain concepts and details that could easily be achieved in another manner. Right now, we could make the teacher an inspirer, somebody who develops motivation and keeps it high, while at the same time give educational media the job of presenting factual knowledge in an organized, systematic way. Right now, we could arrange it so that a student who wanted to see a delayed action film on how a flower blooms could go to a corner of a room, push a button or dial something, and see exactly that all by himself. We would not even need to have a class or a teacher to do this. Right now, if we wanted a student to understand the battles of the Civil War when he was at that point at which he wanted to understand it, he could dial a film and see it in some private viewing place. We could do these things; we do not have to wait for any technology! Right now, we could put on a computer everything that is in the Encyclopedia Britannica--40,000,000 words including ifs, ands and buts--on a computer, we could have a dialing system whereby anything you wanted to know could be dialed for and a printer would print it out, you could read it and then throw it away. Absolute, up-to-date, complete information would be in anybody's hands at any time it was wanted. Right now, we could have a system of centers for current information, that would be wired into schools, rather than being shipped to them in cartons of books that had in turn spent six weeks in a bindery; which had prior to that time spent much time on a press; prior to that much time in an editorial shop; prior to that much time in an author's hands. These are not things that depend upon some new science or some new technology. These are things that are now in existence, that actually in many instances are being used by industry and government and are not being used by the educational system.

They say that there are two backward industries in the United States, railroading and education. I went from New York to Philadelphia the other day on the Pennsylvania Railroad; I think it is more backward than education. Education is backward to this extent. We educators do not bring together all of the things that are presently available to make it possible for us to change a learning situation from an archaic one to a modern one. Knowing of a number of fears in this regard, I am quite convinced that the scripture is correct even though it may not be possible to interpret it the way I am interpreting it, but the words are correct. It says, "the word becomes flesh." Meaning is not something that can be pulled out of some electronic box. Meaning must be in flesh; it involves humans. It must be in a transmission from one human being to another. I do not question that this is true. The central place in an educational structure is always going to be a teacher. Facts, no matter what they are, have never spoken for themselves in their lives. Facts speak only when they speak through the meanings that somebody gives them and that somebody is the teacher. But are we actually now giving the teacher the kind of material support that the teacher needs to keep him from becoming obsolete, to keep his mind modern and up-to-date. We are not accomplishing this because we are not using the actual materials of transmission that are available to us.

The teacher will still be a funnel; the teacher will still be a filter. We must give the teacher what the teacher can best use in this day and age, not what the teacher used well previously.

Where is the student now? The student walks into a classroom or into a school. What does this student find? I was in one yesterday, a fine old school in Philadelphia. I stood outside the door of a classroom. The teacher was teaching geometry. It happened to be the same classroom in which 30 years ago I was taking geometry. It was not the same teacher. It was the same blackboard; it was the same set of chairs; and the words were identical. The blackboard was being used in the same way. The great big wooden compass was up there swinging in precisely the same way it had been before; the chalk dust was all over the place in the same way it had been before; and the exasperated tone of the teacher was precisely the same. I could have closed my eyes and she would have been talking to me and throwing me out again; 30 years of identical instruction. Now you can claim that geometry has not changed. Well, geometry has changed, and it has changed a great deal in 30 years. It is no longer the same science; it is no longer the same subject. Ways of presenting it have changed. They have changed so radically in certain experiments that many of us would not even recognize it as geometry any more. There I stood and listened to a replay of a record that I knew had gone on 30 years before, and probably had gone on 30 years before that. I suppose all of us could experience the same thing in almost any school.

What is happening to this student? This student goes into this kind of an environment for five hours a day. This, to this student, is learning. This is what is meant by academic discipline. This is what is meant by scholarship. This is what is meant by filling your mind with something important. Then the student goes out and sees a multi-million dollar movie made in Hollywood, sees where countless brains and talents at unheard of expense have been brought together in one place, where retake after retake after retake has been made where thousands upon thousands of feet of film have been destroyed because they were not up to a very fine point of perfection, and where men and women of fabulous talent have been pooled in concentrated effort and work 18 and 20 hours a day for stretches of time to produce this one single film. This one single film has a degree of perfection; not the sloppiness of the teacher up there with the old compass, blackboard dust and all the rest of it.

The obvious thought for the afore mentioned student is that the most important thing in one's life is to be engaged in entertaining, not in enlightenment. If you want to talk about communication, talk about it, but you talk about it in two ways and two ways only. We communicate to entertain, and we communicate to enlighten. Put the two together and what do we have? On the one hand, we have communication in terms of enlightenment in a shoddy, obsolete, unattractive fashion; and on the other hand, we have communication for entertainment in the most brilliant package we can give it. Then the same student walks out of this movie, goes home, turns on television, and discovers an hour's story about man's challenge in OUTER LIMITS. For one hour, there are enormous talents of production; enormous talents with regard to scenes, designs, acting, everything else, for one ephemeral hour on television the purpose of which is to show how futile man's efforts are in adapting to his environment. The student turns off this exciting and morbid presentation and next morning goes to school.

What kind of impression do we make? I think as educators we make a very peculiar one to this child in this day and age. He unconsciously begins to understand that his parents and his elders, are not nearly as serious about enlightenment as they are about entertainment. These people have not taken the same kind of trouble to present enlightenment as they have to present entertainment. These people really do not mean what they say when they say that education is the most important thing that can happen to one. I think that they are right if they get this view. I think they are right, completely wrong and right.

We are serious about this but we have not brought together the things which we must bring together. We have not been able to convince other people that we need the tax money to do the right kind of job. We have not been able to convince ourselves in our own groups, in our own communities (I mean by that communities of scholars), that we do not have libraries, AV centers, a teacher, and a classroom, all separately located. We have not convinced all of our own constituents-the teacher, the administrator, and the supplier of material-that this is a single joint enterprise focusing finally on one point and that is the learning situation of the student. Nothing else makes any difference. We have not done this ourselves. Yet, within the academic community, until we do make a joint effort, we are not going to convince the people outside. We are not going to convince these students that their lives, their destinies, the destiny of this country, the destiny and hopes of the Western world, all rely on what is on their heads, what they value most, what they know, and what they can do with their minds, not with their hands.

In my view we are confronted right now with the worst crisis we have had as far as the way of life we think is important is concerned. The worst crisis is to change this educational system, one which did the most fantastic job of any educational system ever devised by man. It made a nation out of a polygon group of people that came from hundreds of foreign nations, with countless thousands of prejudices against each other, with terrible hatreds that went way back into time. Taking that group of people and making a nation of this kind in this brief length of time was a miraculous job and I do not think that anything did it except the educational system. But now we must adapt this same educational system that did this fantastic job and make sure that it transmits knowledge accurately, richly, in all its fullness, from one generation to the next, and from one individual creative mind to other minds. This we must do by bringing together every single aid we have, whether it is a teaching machine or not. I do not know any "teaching machine" but if there is such a thing, if it teaches, and if it is a machine, I am for it. If it is a film, I am for it. If it is television, I am for it. If it is radio, I am for it. If it is any single way, any single thing that can contribute to this objective of developing the most modern, the most completely effective and the richest learning situation for the student, I am for it. This is the challenge of contemporary communication. This is the point at which we have arrived from the first grunting stages of mankind trying to communicate, one with another.

We have come a long way, but we now must recognize that we are completely dependent upon this communicating system. If we do not bring it together and if we do not have it as our servant, it will serve us with great ill. We will never get out from under the surfeit of words; it will be used for propaganda. It will be used to deceive man rather than be used for his glory. This to me is the most serious crisis I see. I see certain political crises in China, Russia, South Viet Nam, and elsewhere. Political crises will pass but the crisis of being able to accurately and richly transmit knowledge will not pass until we solve the problem of how do we get all of these things together in a single package for the most complete learning for our children and for our students.

APPRAISAL OF MEDIA AND MATERIALS

PROBLEMS AND PROJECTS IN EQUIPMENT APPRAISAL

Edward Golub, New York City Board of Education

1. INTRODUCTION

2. PROCEDURE FOR EQUIPMENT AND SYSTEMS REQUISITIONING

A. Requirements - set by:
  1. Experience
  2. Committee meeting:
    a. Simple description
    b. Complex description

B. Requirements forwarded to Bureau of Supplies

C. Meetings with industry when new or special items are required

D. Specifications -
  Written by purchasing agent of Bureau of Supplies with cooperation of Engineering Department of BAVI:
    a. Make and model
    b. Performance specifications
    c. Comparative specifications

E. Appraisal and evaluation

3. PROCEDURE FOR EQUIPMENT AND SYSTEMS EVALUATION

A. Technical tests -
  1. BAVI and Bureau of Supplies Engineering Departments
  2. Test equipment

B. Field testing at schools

C. Review of test data by committee

D. Report forwarded to Bureau of Supplies

4. CRITERIA FOR EVALUATION

A. General -
  1. Usefulness for intended educational purposes
  2. Safety - electrical, mechanical, thermal
  3. Quality of construction - electrical, mechanical
  4. Operating simplicity
  5. Maintenance factors
  6. Cost

B. Detailed Guide List

5. EXAMPLES OF SPECIFICATIONS AND EVALUATION LISTS

   A. Magnetic tape specifications - evaluation data

   B. Motion picture projector specifications - Evaluation Rating List - point system

   C. Language laboratory inspection check list

6. SPECIAL PROJECTS

   A. Projector lamp problem -
      1. Infrequent reports from schools
      2. Tests by Bureau of Supplies laboratory
      3. Withdrawal directive
      4. BAVI testing program
      5. Meeting with lamp manufacturers
      6. New lamp development
      7. New projector

   B. Phonograph safety program - isolation transformers

   C. Headphone - microphone unit for language laboratories

7. CONCLUSION -

   A. Need for greater attention to technical aspects by educators

   B. Need for unbiased engineering personnel with educational experience

STATE PROGRAM FOR REVIEW OF EDUCATIONAL COMMUNICATIONS

William G. Henry, Jr., State Education Department

Evaluation, communication, and education all share one common denominator, namely, the factor of constancy. All of these processes, whether they may be a manifested reaction or an unconscious reflex are, without a doubt, a constant factor of our human behavior.

Evaluation, like communication, depends very heavily upon the background of information, emotions, and inferences people bring to the communication or, if you will, evaluation experience. Why someone considers something good or bad depends upon many things...how a person feels at that particular moment... how much interest he has in what he is being exposed to...or how "valuable" he considers the experience he is having is over any alternate experience he may be able to have at that same moment.

Education, like communication, depends for its best efficiency on a continuing pattern of evaluative measures. This is clearly evident when we consider the amount of testing that is being used today to estimate how well information has been communicated and comprehended. Unfortunately, though we really do not yet know how or when learning takes place...or even what this "change in behavior" is, although there are numerous definitions that are useful in various situations.

Fundamentally, the process of evaluation is a subjective one. It is a qualitative measure that is assigned to a quantitative entity. It is an interplay of adverb queries and adjective responses...it is elusive, persistent, and unstable. Most of all, though, it is a challenge that requires us to learn to ask the right questions, and many of these right questions before we can say that we have anything near the way people really value an object or an experience.

Along with evaluating the learner, educators who are at the forefront of their subject area are also constantly evaluating the materials they use. But our degree of evaluating materials has not progressed at the same rate of determination as our measures of evaluating learners. One reason for the big difference here, I submit, may be the question of animate and inanimate relationships. When we are evaluating an individual, the whole field or concept of the communication act is working for us. Between two animate objects there is not only transmission but continuous feedback being exchanged. Whereas in communicating or, if you will, evaluating with an inanimate object, there is only the factor of transmission. The feedback that is present is only that which is internalized by the evaluator himself. I contend it is this internalized interaction that really formulates the evaluator's appraisal of the inanimate object.

The only animate communication experiences students have are those which can be shared with a teacher or another student. Books, films, recordings, etc., can only offer the opportunity of internalized interaction and are, therefore, not complete enough in themselves to provide an optimum teaching-learning experience. Yet, from an economical and practical point of view, their use and service is unquestionable. The crucial point here is that of determining how potentially valuable, or effective they may be as instruments for the teacher to use to capitalize on this internalizing process.

It is to this point that the work of Project AIM* has been directed. Essentially, it is hoped that we may develop a program of standardized evaluation which will be useful to the teacher and educational communications specialist.

This probably represents the first effort of this type to be attempted on a statewide basis which is guided by the uniting framework of a state curriculum. Other studies concerned with evaluation have been conducted for various purposes and on differing scales.

Hoban (5), in 1942, with the assistance of a General Education Board grant conducted a study which concerned itself with evaluation and resulted in the publication of two works...the first, a Descriptive Encyclopedia of Selected Educational Motion Pictures, and the second, a very useful discussion of how the project was carried out entitled, "Focus on Learning."

Among the valuable insights Dr. Hoban gave was:

> "Evaluation must be applied not only to gross results at any given point in the curriculum--to the products themselves--but also to the materials and procedures that were utilized in developing the various phases of student growth that are attributed to the curriculum. Unless the process of evaluation is applied to materials and procedures, it is difficult to determine those elements which have been effective in contributing to the attainment of the objectives of the curriculum, and without this determination it is difficult to increase the efficiency of the curriculum."

In 1945, several thousand school administrators and teachers cooperated with seven publishers for the purpose of evaluating the effectiveness of the visual aids then available and to explore more fully the possibilities of correlation between film production and textbook publication. This study conducted by Belknap (2) was basically an attempt to determine the economic soundness of publishers extending their markets to include the production of educational films. Ironically, Mr. Belknap's recommendation to the committee of publishers was one of caution, advocating deferment until a time when a wider market may offer better opportunity. Fortunately, for the field of education, all publishers did not heed his words, or the strides that have been reached thus far by the educational film might still be only a latent curiousity waiting to be developed by some enterprising organization interested in the improvement of educational technology.

Another attempt at evaluation was a project to develop a nationwide program of film evaluation sustained by the Educational Film Library Association (1). Although the need for some standard by which critical interpretation and systematic cataloging was recognized, the emphasis of this program, unfortunately, was placed more on the cataloging aspect than on evaluation. The value of this service beyond that of merely identifying material becomes questionable, too, when one considers the disparity that characterized the evaluators and the small amount of information that is collected from these evaluators.

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*Project AIM -- Appraising Instructional Materials

Gilkey (4) predicted the need and value of establishing projects on evaluation when he declared in the conclusion of his research which studied the bibliographic preferences of science educators:

> "As a final word, it is hoped that a single organization or a complex of organizations will be responsible for locating and assembling information relative to bibliographic data and content; then the professional organizations in the several disciplines cooperating with teachers, supervisors, and communication specialists could use the above information to select and evaluate all potentially useful material. The evaluations reported, using (a) preferred useful bibliographic entry, could enable teachers to base final selection of newer educational media on the critical bibliographic entry itself or on a combination of the information supplied by this entry and personal previewing of several of the seemingly most appropriate films."

In analyzing the reports of these studies, several factors seem to have contributed to the difficulty of assuring success to the early attempts at evaluation: first is the question of the usefulness of the information collected; second, the question of consistency and reliability among competent evaluators that would insure a certain amount of continuity; and third, the consideration of the criteria that is too inclusive to really serve the needs of teachers or AV personnel in determining material selection for specific areas. This last point assumes even greater importance when one considers that there is no such thing as a national curriculum.

The basic objectives of Project AIM can be stated as: (a) to acquaint teachers throughout the State with information about what material is available; (b) to reduce the amount of time and administrative work directed towards the task of previewing materials; (c) to improve the utilization of instructional materials in the classroom; (d) to assist in the wiser purchase of instructional materials; (e) to provide material to be used for preparing better catalogue descriptions; and (f) to stimulate the production of better materials.

The advantages of such an operation are evident from the fact that all material will be evaluated with the State curriculum as a guide; that the teachers who will be serving as evaluators will be carefully selected; that more time and efforts of local AV supervisors can be redirected towards other aspects of their work such as that of in-service teacher training and local preparation of materials; and, that AV supervisors will be supplied with evaluation that can assist them in their selection of films.

The impetus for a program of media evaluation such as this is kindled by the impossibility of the task of previewing all new materials on the basis of sheer quantity alone. Figure I, developed from the findings of Hope (6 & 7) and Flory (3), dramatizes this by presenting figures of the production trend of educational films over the last five year period. In this medium alone, there is an average yearly production of over one thousand individual items. When this amount is compounded by the releases of materials in the other media such as filmstrips, disc and tape recordings, and programed instruction, the total amount becomes physically impossible and impractical for schools to handle individually.

As part of the work scheduled for Phase I of Project AIM, consideration was directed towards the task of determining just how such a program could best be developed in New York State. Much of the information needed to grasp a perspective for this study was obtained by means of a survey designed to collect some of the present practices, procedures, and opinions to which various AV personnel throughout the State adhere. Responses from 35 districts out of a sample of 53 have provided us with information that seems to verify many of the hunches we had, as well as serving to direct our attention to some areas which were not considered to be too much of a problem at this time.

The first item on the questionnaire was concerned with the purposes for previewing new materials. Respondents ranked the five purposes considered to be basic ones in the following order of importance: first, to acquaint teachers with new material; second, for purchase considerations; third, to write catalogue descriptions; fourth, because they felt better qualified than most to evaluate material; and fifth, because there was no current source of information available.

In response to the task of ranking the various media in terms of difficulty of evaluating them, programed instruction was ranked as the most difficult, followed by: film series, tape recordings, filmstrip-record combinations, disc recordings, films, and filmstrips. The most frequently mentioned evaluation difficulties were: lack of time, obtaining materials from producers for preview, and the lack of competent evaluators.

The average AV supervisor in New York State according to this survey devotes approximately 1/5 of his time to activities related to previewing new materials, and 16 of the 35 respondents stated that they felt that some of this time could be used to better advantage if part of the work was handled by an outside source.

In considering some of the main determinants of material acquisition, AV directors ranked the factors supplied to them in the following descending order of priority: need; potential use; content; correlation to curriculum; and finally, cost. And responses to this item reflected a fair degree of agreement ($r = .35$), (8).

Only two persons indicated that they had observed no differences in the utilization patterns of materials that had not been evaluated locally before purchased. Most responses were qualified with the statement that no materials were purchased without first previewing them.

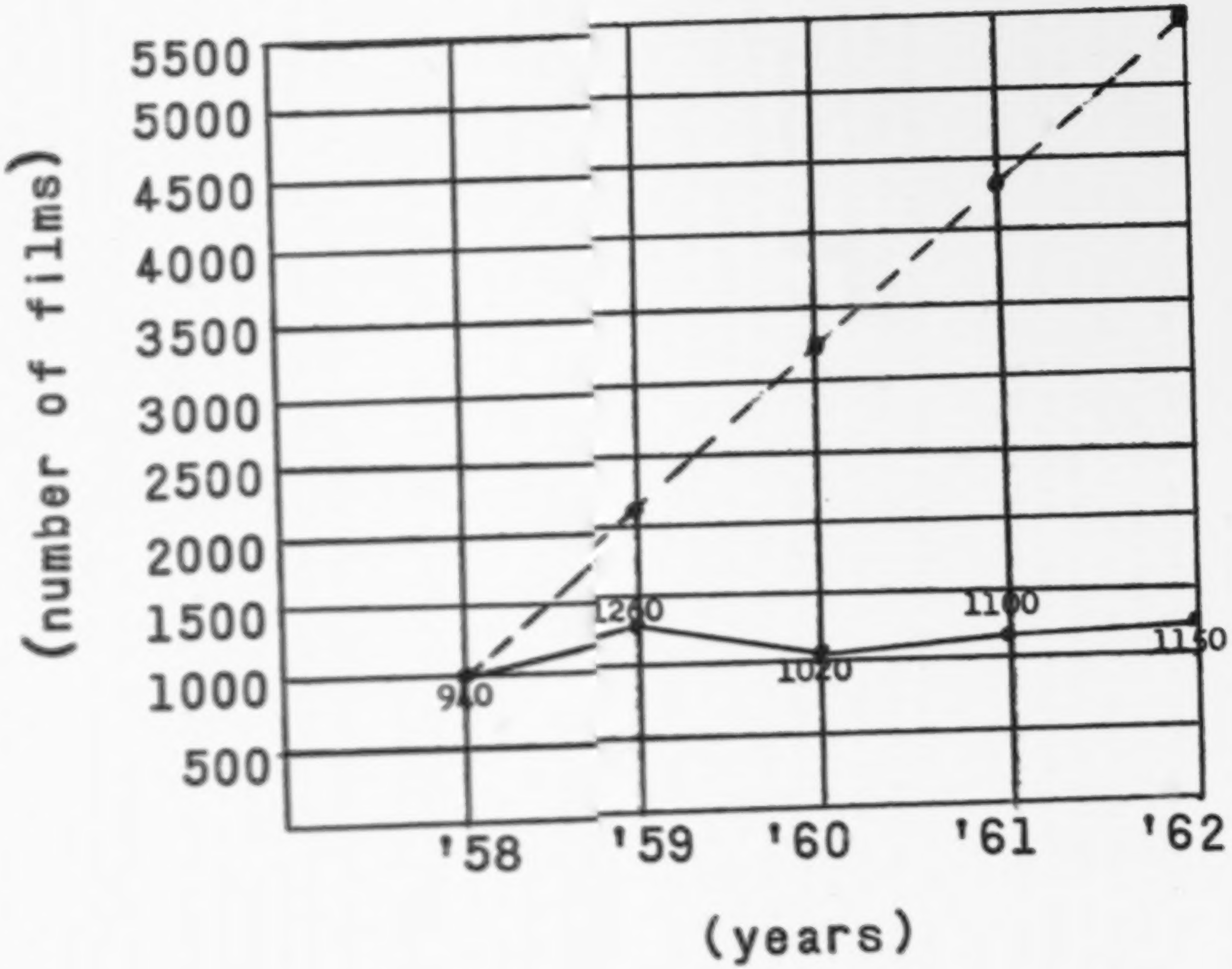

Figure 1: Production trend of educational films

In an attempt to determine the schedule of material purchased throughout the State, respondents were asked to indicate the purchase schedule they followed as a regular rule of operation. Twenty departments purchased materials on an annual basis, seven biannually, six monthly, and one on a quarterly schedule. One department had no firm policy.

More than 1/3 of the requests for preview privileges of new materials originated with the teachers themselves. And this, no doubt, accounts for the responses that indicated that in 33 of the areas surveyed, teachers were cooperative in the job of evaluating new materials, even though in no case did this extra work mean extra money. Five areas, however, did provide teachers with compensatory time in exchange for time spent in evaluating new materials.

In every case, AV directors were satisfied that teachers were competent judges of new material geared to their level of teaching, and for the most part, indicated that the most competent teachers in their judgement were doing the evaluating. The influence that teacher reactions to new materials have on their purchase is an important determinant in 26 of the areas sampled. Many directors cautiously suggested that such reactions serve as useful indicators of potential use. However, approximately 60% of the directors consider that the judgements of "outside" evaluators would be equally valuable in "sifting out" materials to be considered for purchase.

To an item concerning the use of presently available commercial publications providing material evaluations as a major service, 1/3 of the respondents indicated that they did make regular use of the service provided by *Educational Screen and AV Guide*. The second most frequently mentioned response, however, was *NONE*, and this response was registered also by 1/3 of the respondents. The remaining responses included names of such publications as *E.F.L.A.*, *AV Instruction*, *Wilson's Guide*, *Film News*, *Film World*, *Landers Film Reviews*, and various producer's catalogues.

Over 70% of the directors returning the survey indicated a positive attitude towards the establishment of some type of Statewide program concerning media evaluation coordinated by the Division of Educational Communications. All but three respondents indicated that ratings which call attention to definite shortcomings would be more helpful than those which merely intimate inferior material by not including them in a published report.

In an attempt to determine the degree of detail AV directors would prefer in the film description section of an evaluation report, three sample descriptions were submitted as part of the questionnaire. Responses to this item suggest that a more concise description of approximately 100 words in length is preferred over a longer and more detailed version of 300, or a brief version of 50 words, although this preference was not overwhelming.

In summary, the typical case is characterized by an audio-visual supervisor who spends about one fifth of his time with duties related to previewing new materials and because of an already demanding schedule indicates that this time could be used to better advantage in performing other duties. He has a positive attitude toward the proposal for a statewide evaluation program.

It would hopefully alleviate him of some of the work in evaluating materials by providing him with enough information about an item to allow him to eliminate the unsuitable material immediately. He indicates that he would make use of such a service, even though he is now generally not utilizing any of the commercial review services as regular references and even though such evaluations would be the reactions of teachers outside of his immediate area. He prefers film descriptions of moderate length which are openly frank in their ratings. He subscribes to the need for teachers to be involved in the evaluating procedures since their needs are his first concern, and the potential use of any material is largely dependent upon teachers' judgements of this material.

AIM, as it was originally conceived, exemplified a cooperative venture. Its success is going to depend primarily on how well selected teachers work together towards a common goal. The job is a basic one as well as a traditional one and its role shall inevitably be recognized in greater proportion as more suitable methods of appraising and utilizing materials result in improved instruction.

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PROBLEMS AND PROJECTS IN MATERIALS APPRAISAL

Bertha Odessky, New York City Board of Education

I. THE POLICY

New York City maintains the "open list" policy in the purchase of teaching materials. This policy offers equal opportunity to all producers, contractors and distributors to offer their products for appraisal at designated periods, thereby securing for the schools the opportunity to choose the best material available. All items submitted are evaluated and those that are approved are included on our official lists. The selection of titles from the wide variety on the lists is the responsibility of the heads of the schools.

The appraisal of materials of instruction is a task requiring the participation of hundreds of teachers and supervisors. These evaluators are carefully selected. It is expected that they have an understanding of the needs and abilities of children, a knowledge of the objectives of the curriculum at various levels, an expertness in the various subject fields, and a familiarity with current practices in the audio-visual field. It is also necessary that these evaluators are not involved in producing materials in the fields in which they are evaluating.

II. PROCEDURE

1. SOURCES OF MATERIAL - Circulars are sent periodically to producers and contractors inviting them to submit materials. Application is made on forms provided by the Bureau of Audio-Visual Instruction and in accordance with the established procedure.

2. ORGANIZATION OF MATERIALS - From lists on the application, materials are divided according to curriculum areas and grade levels for assignment to official reviewing committees.

3. COMMITTEE APPRAISAL - Confidential viewing and auditioning committees meet and evaluate material in accordance with our criteria. Where necessary, material is referred to other committees for re-appraisal.

4. PREPARATION OF LISTS

5. APPROVAL BY BOARD OF EDUCATION

III. PROBLEMS

1. PROBLEMS OF MATERIAL

   Quantity of material submitted

"Open List" policy results in submittal of large volume of material, much of which is unsuitable for educational purposes.

Coordinated materials consisting of published and audio-visual materials are time-consuming. They also pose the problem of routing to the proper committee since we have textbook committees as well as audio-visual committees.

Quality of material submitted

Present an unrealistic picture of our changing society.

Not in harmony with curriculum or pupil needs. Educational Consultants involved in the production of these materials are frequently far removed from the classroom and its problems.

Gaps in curriculum coverage. Material needed for current emphases often not available - e.g. human relations films for young children.

Inaccurate and inadequate description of material results in referral from one committee to another.

"Sensitive" areas of appraisal - minority group representation, religious material, sex education, etc.

2. PROBLEMS OF PROCEDURE

Paper work

Lag between date of production and date of availability for purchase - problem of procurement of "timely" material

Scheduling

Physical conditions - viewing facilities, storage, distribution, shipping

3. PROBLEMS OF PERSONNEL

Release of committee members - time involved, class coverage, other commitments

Need for representation of all groups

Conflict of interests

IV. PROJECTS

1. Streamlining of procedures - Multiple carbon forms, requesting additional information from producers, are provided. These help to reduce clerical work, assist in filing and cataloging, and help to route material to proper committees.
2. Pre-Screening - elimination of films not in harmoney with course of study
3. Continuous submittal project - change from submittal at fixed dates to submittal at producer's request, in order to eliminate the gap between production date and official listing
4. Post-purchase appraisal - reaction forms obtained from users of material in order to guide future purchase
5. Field appraisal
6. Substitute pool to provide for class coverage of committee members
7. In-service course in appraisal
8. Programed materials - plans now being made to initiate the appraisal of programed materials in February, 1964

V. CONCLUSION

The problem of appraisal of audio-visual materials in New York City is complex. An important factor is the size of the City with its changing population, language problems, ethnic considerations, heterogeneity, school population ranging from the mentally retarded to the intellectually gifted, etc. Another factor is the procedure established by the Board of Superintendents which requires us to evaluate all materials submitted to us in accordance with the "open list" policy.

Curricula are in constant process of revision and we must maintain a continuous flow of up-to-date materials to the schools. We are constantly re-examining and revising our criteria and procedures in order to achieve our objective of supplying to the schools audio-visual materials of optimum quality.

EDUCATIONAL TELEVISION

REPORT ON TELEVISION COUNCIL ACTIVITIES

Carl Balson, State Education Department

To put this discussion on ETV councils into some sort of perspective, a brief historical outline is in order. A council is a local organization, chartered by the Board of Regents, which owns and operates an ETV station and serves communities with educational and cultural programs. Across the entire State of New York it is possible to have 31 ETV stations in operation. The development of these stations is outlined in a study by Dr. Glenn Starlin entitled, "Television and Higher Education." Basically, the Starlin report envisions a four-phase development, starting with the cities located along the New York State Thruway (Buffalo, Rochester, Syracuse, Albany, New York City). A microwave link system would interconnect these stations on a two-way basis. Then, as other stations are added in the other phases of the development, more microwave is added to the State network. The Thruway stations alone would reach 88 per cent of the population of the State.

Presently, nine councils are chartered by the Regents. Three of the nine are operating with their own ETV station. They are located in Buffalo-WNED, Schenectady-WMHT, and New York City-WNDT. The other councils are offering programs through local commercial facilities of one type or another.

Let us look at each of the nine councils and examine, briefly, their activities:

WESTERN NEW YORK EDUCATIONAL TELEVISION ASSOCIATION is located in Buffalo, New York. It is operating Channel 17 covering the Buffalo-Erie County area. This council is one of the major production centers of instructional television programs which are used throughout the State. More on this point later.

ROCHESTER AREA EDUCATIONAL TELEVISION ASSOCIATION is presently programing over the two VHF commercial stations in Rochester. They are able to offer a good range of programs for the benefit of both in-school and adult audiences. The council has an application filed with the FCC, currently uncer the consideration, whereby the council would share a VHF channel with a commercial operation. If the FCC decides against this application, RAETA would then apply for the ETV channel reservation for Rochester. RAETA also produces programs which can be used throughout the state.

EDUCATIONAL TELEVISION COUNCIL OF CENTRAL NEW YORK in Syracuse is just starting. They soon hope to apply to the FCC for a CP, and also to set up a production center to produce ETV programs for local and State-wide use.

MOHAWK-HUDSON COUNCIL in Schenectady serves the Albany, Schenectady and Troy area with both in-school and adult programs broadcast over Channel 17. They were recently able to increase their power to enable several new schools to receive their signal. WMHT is also a producer of video tape programs which are used throughout the State.

EDUCATIONAL BROADCASTING CORPORATION in New York City operates Channel 13. They cooperate with the New York City Board of Education in presenting their in-school programs. Then, after the final school bell has rung, the adult-cultural programs begin. ERC is a major production center for cultural programs which are used throughout the State.

SOUTHERN TIER EDUCATIONAL TELEVISION ASSOCIATION is located in Binghamton. The council is currently presenting programs for in-school use over local commercial stations. One unique feature of this council is the fact that there is not one VTR in the city; thus, all their programs are either local-live or produced on 16mm film. This is the only council that is sending programs throughout the State on film instead of video tape.

SOUTHERN FINGER LAKES EDUCATIONAL TELEVISION COUNCIL is situated in Corning, New York. This council offers in-school programs over a locally operated community cable system. This is a unique arrangement for the State. This council generally is not a production center for either local or State programs.

LONG ISLAND EDUCATIONAL TELEVISION COUNCIL, INC. is a new council just developing its resources. They hope to apply to the FCC for a CP. At present, they are gathering information and supporting funds for their application. They are not producing any programs.

ST. LAWRENCE VALLEY EDUCATIONAL TELEVISION ASSOCIATION is located in Watertown, New York. This council is currently operating on a limited schedule of only five hours per week. They do act as production center for programing for State-wide use, but, again, are very limited. They broadcast their in-school materials over the local commercial station.

From the above comments on each of the councils, their activities should be fairly clear. First, the councils have a prime responsibility to serve a community with both in-school and adult programing. Each council, when possible, contracts with local schools for the use of their aired programs. By the same token, the schools, with the cooperation of the council organization, dictate their needs and help in the production of the programs by supplying the necessary educational experts. In all cases, the council's in-school programing must reflect the curriculum needs of the community that the council is serving. The adult-cultural programing also reflects the needs and interests of the community at large.

Second, the council should act as a production center. They, of course, produce programs for local use; but may, however, produce programs to be used throughout the State. A council's contract is with the State Education Department through the Division of Educational Communications. At a joint meeting of all the councils, each council presents proposals on projected plans for future production. Comments are collected and weighed to establish what each council can do for each other and also for the general needs of the State. Then, the State Education Department contracts with each council to produce those programs which would be most useful throughout the State. These programs are produced on video tape. Each council also is able to supply the necessary teachers guides. These tapes and materials are deposited in the Educational Media Distribution System located in Albany to be distributed free of charge to any educational group in the State. It is in this manner that the councils are connected financially to the State Education Department.

In conclusion, we will summarize these two points as follows:

1. A council has a primary function to serve a community with the best of educational and adult programing, reflecting the needs of the community.
2. The council should act as a production center for themselves and the State, by contract.

The councils will act as the heart and backbone of the State ETV network, when it is finally activated.

STATEWIDE SYSTEM FOR EDUCATIONAL TELEVISION

Lee E. Campion, Director, Division of Educational Communications
N.Y.S. Education Department

In New York State, the task of developing a statewide plan for educational television is the responsibility of the Division of Educational Communications of the New York State Education Department. The plan has been evolving for more than a decade and will be in a perpetual state of change as it is altered and molded to meet the educational challenges of the next decade. The plan is not a simple one. It has several complex phases to it depending largely upon school and community support. To understand New York's approach to ETV, an examination of history of ETV in New York State and the four main parts of the statewide ETV plan are necessary.

Experimentation and Research

Since the early 1950's, the New York State Education Department has been involved in educational television. In 1958, the state began an experiment with television called the Regents Projects. At the conclusion of the Project in 1961, no doubt remained--television was an effective medium for instruction when imaginatively planned and constructively utilized. The medium, the Project concluded, was a powerful communications system that educators should seriously examine and put to use. Following the experimental period Dr. Glenn Starlin, consultant on Television in Higher Education, was brought into the New York State Education Department to do a one-year study concerning television and higher education. The result of Dr. Starlin's efforts is a report commonly known as the Starlin Report and officially titled "Television and Higher Education: A plan for Statewide Development in New York." This excellent study has become the basic plan for a statewide education television netwoek for all educational needs as well as for higher education.

Local Assistance ETV Program

At the time the Regents Project was drawing to a close and the Starlin Study was beginning, the state appropriated $200,000 to support the Local Assistance ETV Program.* This program supplied funds, on a matching basis, to school systems developing their private television systems. Most of the 15 school systems in the program turned to closed-circuit television to meet their educational needs. Several supported broadcast open-circuit systems. The project at Plainedge, N.Y., helped to support the FCC experiment with the 2000-mc frequency, the only such experiment anywhere.

The success of the Plainedge experiment helped the FCC to decide to release the 2500- to 2690-mc frequency band for educational use. Since the release of the 2500-mc system, several projects in New York State have begun developing the 2500-mc system. The primary purpose of the ATS program is to assist school systems in establishing the physical facilities for telecasting and to develop an ongoing program of instructional television (ITV) service.

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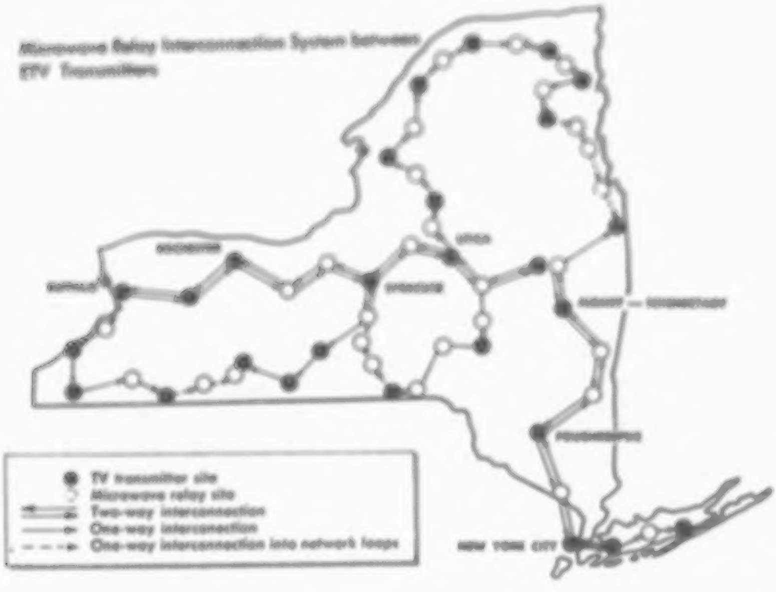
*The Local Assistance Program is also called the Aid-to-Schools (ATS) Program.

Due to limited funds, only 15 school systems have been assisted financially. However, consultants services, workshops, and demonstrations have been provided throughout the state to institutions developing ETV on their own and to organizations active in promoting educational television. In addition, the Technical Support Section of the Division of Educational Communications provides technical information to school systems planning TV facilities. ATS has been, and is, the state's most active program in assisting the public schools in developing ETV on an intraschool system in cooperation with other school systems.

ETV Council Program

Broadcast open-circuit television in New York State has developed through the community-station concept. The state does not own or operate ETV stations. Rather, broadcast stations have sprung up in Buffalo, Schenectady, and New York City primarily through the efforts of the ETV councils of each local community. The continuous operation and support, therefore, lies in the hands of the ETV councils and the local community.

In 1962, the State Education Department through the Board of Regents, requested 10 channels to be reserved as educational channels. This request was granted. This year, the FCC proposed to reserve 17 additional ETV channels for New York State. Community ETV councils wishing to activate a reserved channel must be chartered by the Board of Regents before they may become nonprofit organizations operating ETV stations as community resources. At present, New York State has chartered nine ETV councils. Three of these councils are on the air while three others are contracting for service with commercial stations or commercial cable companies. The remaining three councils are in various stages of planning tb go on the air with a community station. In addition, the New York City school system is in the process of planning to own and operate an ETV station.


Microwave Relay Interconnection System between ETV Transmitters
ROCHESTER
BUFFALO
UTICA
SYRACUSE
ALBANY — SCHENECTADY
POUGHKEEPSIE
NEW YORK CITY
TV transmitter site
Microwave relay site
Two-way interconnection
One-way interconnection
One-way interconnection into network loops

WMHT is connected to the Eastern Educational Network Boston station by off-the-air pickup and microwave. WNDT is connected to the EEN network by telephone line. WNED in Buffalo receives its Eastern Educational network service by video tape. Eventually it is hoped that five major cities along the New York State Thruway will be operating community stations linked together through a microwave system that will be connected to the Eastern Educational Network System. In addition, satellite stations in smaller cities will receive part of their educational television programing from the main planned network source.

The ETV councils developing full-scale television studios and facilities will be as they are now, the production centers for educational programs. At present, six of the councils contract with the State Education Department for the production of programs. For the most part, the ETV councils meet and plan the programing to be completed each year. On occasion, the State Education Department requests the production of specific series. The State also purchases completed programs or program series. The result of this contracting service for programs is a video-tape center currently valued at approximately $750,000.

This year, the state will add an additional $339,000 in programing to its Educational Media-Materials Distribution Service. These video tapes are available to any educational institution in the State upon request.

Television and Higher Education

The Starlin Report not only recommended the activation of broadcast stations throughout the State for higher education's use, but it recommended development of television facilities on campus and for interinstitutional cooperation. Although the State Education Department has not had funds in the past to assist in supporting television facilities for higher education, it is requesting funds in 1964. An increasing interest in interinstitutional cooperation has provided the impetus for this movement. For example, in New York City, the Council for Higher Education has been successful in interesting 18 institutions in planning for a cooperative program for educational television. The purpose of the program is to share facilities, personnel, and service. The State Education Department through the Division of Educational Communications has provided consultant service to higher education institutions and organizations in a continuous program to spark on-campus and interinstitutional growth.

VTR Network

One of the greatest potentials of educational television is the exchange of program materials on video tape. In this way, the finest in ETV can be captured and reused in furthering excellence in instruction. The State Education Department is exploring every possibility for acquiring quality video tapes to provide programing for all levels of education and for all citizens.

Recent announcement of the availability of four closed-circuit type video-tape recorders (VTR) has paved the way for a further service in supplying ETV councils and educational institutions with programing. Those institutions having a closed-circuit television system and a low-cost VTR can avail themselves of the State's video-tape resources. By sending their tape to the State's Educational Media-Materials Distribution Service (EMMDS) in the Division of Educational Communications, the EMMDS will duplicate from master broadcast tapes to closed-circuit tapes. The tape will then be returned to the institution for use when it best meets local curricula needs and time schedules. Where immediacy is not of primary concern, and efficient video-tape resource service can provide a vital and effective method of program sharing.

Conclusion

What can a State do? It can do many things. In New York State, the development of a statewide ETV program is richly varied. The State's role is not to decide between broadcast, closed-circuit, or 2500 megacycles. Rather, its role is to explore the potential use of every available system and apply it to meeting educational needs and goals. The New York State plan depends greatly on local initiative and support for its success and growth. The plan is many-faceted at all educational levels. Commissioner Allen expresses the State's role in this way, "The State Education Department has completed a decade of study, experimentation, and evaluation of educational television. We are convinced that educational television offers the potential for more and better education, economically achieved. All that is required now is the will and means to put it into wider practice."

6

FEDERAL FUNDS FOR EDUCATIONAL TELEVISION

Bernarr Cooper, State Education Department

As an introduction and background to the subject of federal funds for ETV here are appropriate quotations from Public Law 87-447.

> "The primary purpose of the Educational Television Facilities Program is to assist, by means of Federal matching grants, in the construction of new noncommercial educational television broadcasting stations through the use of channels which have been reserved by the Federal Communications Commission for educational television. The program also provides for financial assistance to existing stations which propose to improve or expand their operations.
>
> This program is limited by statue to the support of educational broadcast television. The prospective applicant should acquaint himself fully with the advantages and disadvantages of broadcast television. Having first determined his educational needs and objectives, he should study also the potentialities of closed circuit television by means of cable, point to point service in the 2000 megacycle range, FM radio service, and the services available through audio-visual centers. It should be recognized that broadcast television may not always represent the most appropriate and useful application of communications media. Careful planning should precede any determination to apply under this program...."

Basic Provisions of the Act

The act authorizes appropriations of $32 million over a five year period in Federal matching grants for the acquisition and installation of transmission apparatus necessary for non-commercial educational television broadcasting. The Federal matching grants are available only for ETV operations on channels reserved by the Federal Communications Commission for educational use. Not more than $1 million of these Federal funds may be applied to facilities within any one State.

Generally, matching grants may be made for a maximum of 50 per cent of the reasonable and necessary cost of an eligible project, plus an additional amount not to exceed 25 per cent of the cost of eligible transmission apparatus owned by the applicant on the date of application, except that the total Federal matching grant may not exceed 75 per cent of the total cost of the project.

The Secretary of Health, Education and Welfare considers and evaluates individual applications in accordance with criteria set forth in the Rules and Regulations and designed to assure: (1) Prompt and effective use of all educational television channels remaining available (2) equitable geographic distribution of ETV broadcast facilities throughout the States, and (3) service to the greatest number of persons in as many areas as possible with adaptability to the broadest educational uses.

(In the following the editor outlines the informal discussions of Dr. Cooper and the group attending the session.)

The following elements as related to PL 87-447:

1. Implications of the law for the advancement of educational television;

2. Ways in which the law would apply to various educational agencies applying for aid under it; and

3. The importance of understanding the matching fund aspects of the law relating to the use of federal dollars to be used by local educational operations in:

   a. putting new stations on the air; and

   b. extending existing transmission facilities.

Major emphasis was devoted to pointing out that the implication was to aid new stations to come into being. A secondary importance of the law was to make it possible for stations already in existence to extend transmission facilities to provide additional coverage, incorporating within that coverage not only considerable numbers of viewers not previously reached, but also making possible the extension of an educational service for upgrading viewers' knowledge with programs of the following types: general information, broadly cultural, and/or direct instructional, at all levels, kindergarten through higher institutional.

INTER-INSTITUTIONAL TELEVISION

Bernarr Cooper, State Education Department

A major development of the state plan which is related to higher education was previously referred to by Lee Campion. It was done in connection with and as an implementation to Television and Higher Education or what is known as the Starlin Report. Among the things recommended in that report was,because of the geographical location of our more than 194 institutions of higher learning in this State and because of certain proximities of some of these institutions, the use of 2500 megacycle band width to over-come a wide terrain separation between institutions of higher learning. We thought that because of the pecularity of instructional needs of higher institutions of learning, the recognition by thinking institutions of higher education that expansion in content areas in various subject matter fields made an almost impossible task for the administrators of such institutions to adequately staff their faculties at all times--with this in mind it was obvious that if we were to follow the recommendations of the Starlin Report that an interchange and an exchange of instructional mater-ials, informational services and personnel would make possible added quantity and improved quality of instructional programs. If we were to pursue this idea of interchange perhaps we might find implications for future planning

As many of you know, institutions of higher learning by their very nature tend to be rather insular and confined in pursuing what they feel are the objective commitments of these institutions to rendering a full service program, particularly at the undergraduate level. In the New York City area alone, there are more than 50 institutions of higher education. It seemed that here would be fertile ground which would provide a physical situation for instigating change by means of a 2500 megacycle signal. Working through the Council of Higher Educational Institutions of New York City and individual institutions at the administrative level we were able to bring ten of these institutions to a point of recognizing; first, needs within their own curriculum, second, what other institutions in the same geographical area had to offer which they had not and third, what they could contribute to other institutions in areas in which they had unique and special specialities. Once all three of these facets were commonly identified, it was possible to bring these institutions together under the leadership of the chairman of their Board of Trustees, Dr. Brock of the Rockerfeller Institute. With apparently no problems on the horizon, the institutions were able to agree on the first step, a feasibility study with top flight engineers to determine whether or not technically these 10 institutions could be tied together to accomplish readily foreseeable needs in instructional areas. This study is currently going on. The interes-ting thing about the composition of these ten institutions of higher learning is that they do not represent just a single facet of our total state system. These 10 institutions of higher learning include both private institutions, such as New York University; and state colleges and parochial institutions, such as Manhattan College and St. John's.

These institutions have now agreed to mutually invest initial funds into a feasibility study so that they may move forward to the FCC with a request for the granting of X number of channels. The exact number has not yet been determined. In most places at least six channels may be used simultaneously. This would mean, for example, that any one institution of higher learning could bring in, from outside sources, six different instructional programs during any one given broadcast time. The potential for multiplying the kind of quality and quantity instruction that can be rendered to students, no matter the source, seems to be at this moment almost unlimited. That 10 institutions of higher learning should have been able to come together in a recognition of a commonality of needs and services, at this particular juncture, is very significant, indeed. Of course, solving the problems of granting credit, number of hours, and the like, are still in the future. But these are a matter of housekeeping and if the present spirit of good will prevails among these institutions, I am sure that this will be the least of the problems in working out inter-institutional credit.

WHAT 2500 MEGACYCLE TRANSMISSION MEANS FOR IN-SCHOOL TELEVISION

Raymond Graf, State Education Department

As the art of instructional television within school districts has been developed we have become convinced, as others all over the nation have, that to be feasible economically and educationally, television must of necessity be a mass communication proposition. Although at the outset many of the schools with which we worked in New York State had studies within one of the buildings in the district which transmitted programing and instructional materials to the classrooms only within the building, we were aware that this could not be a long-term operation. The cost in money and in personal time is just too great to benefit just a few classrooms.

Immediately, therefore, interconnection of school buildings was investigated so that instructional programing eminating from the studios, from the recorder, or from some other source in the central distribution point, might be disseminated among classrooms of other buildings.

For a long time, there were only three feasible means of interconnecting buildings within a reasonably close geographical relationship. First of all, and foremost was coaxial cable. Coaxial cable had and still does have a great potential for interconnection. Of course, it has a facility built into it for the multi-channel concept which most educators have to come to grips with. A single channel of emanations allowing only one broadcast at a time for various classroom complexes within a district is simply insufficient to meet the great needs that are developed in terms of educational television. Consequently, cable has a most important advantage in that as many as six channels, and with additional equipment more channels can be used for disseminating programs to classrooms. Also, cable has the great advantage of being reasonably weather free and FCC free in the sense that there are no governing regulations which the educators have to follow as do commercial or educational broadcasters. Such regulations include quality of equipment and broadcast and legal considerations.

But as was found in the Cortland experiment over the five years that this experiment was in operation, the cost of tying together buildings or schools at a great distance from the central dissemination point becomes extremely burdensome and indeed almost economically unsupportable. I speak specifically of the Cortland situation where within the city, a very tightly knit geographical complex functioned quite well. However, the outlying central schools of Virgil and Truxton, 8 and 14 miles respectively from the studio, were a real problem in terms of the affordability of the service. With approximately 600 students in each school, the cost of $17,000 a year for the cable facility became a major problem. The chief purveyor of a cable service is the New York Telephone Company which provides a very fine and useful service, one that really works successfully. But because of the cost of cable and of maintenance, the rate has been established at $60.00 per mile of cable per month. Consequently, when you start getting into the 14 mile range or even the 8 mile range with only one school at the end of the cable bearing the expense of the cable facility, you are in a marginal area. It takes a lot of educational programing via that cable, on a yearly or monthly basis, to justify that kind of expenditure.

Unfortunately the system in Cortland never was able to develop the kind of service for these outlying schools which the schools could afford. They certainly appreciated what they received and were fairly successful but it simply was a matter of economics. Now, the City of Cortland as previously mentioned represented a matter of 5 cable miles which meant approximately $5,000 per year for cable rental. This probably was a workable figure for the amount of programing that Cortland did. Cortland is not in operation today because of economy, not because it was an educational failure. The teachers, after learning of the board's decision to abandon television, voted to petition the board to reinstate television and 83% of the teachers signed the petition going on record as opposing the board. This takes a lot of courage. Certainly there was a commitment on the part of the educational staff and the people who used it.

In relation to this discussion of transmission facilities I believe that the deciding or determining factor in Cortland's case was not really the expense of the yearly cable rental. It was a fair rental and one which could have been justified and indeed was justified economically. There are other cable systems which are doing well and providing a good service proving cable has its advantages.

Cable systems in Great Neck Public Schools tie six schools together via New York Telephone service. Baldwin, Long Island has three schools connected with the New York Telephone service and Elmira has the Teleprompter Company owned cable which broadcasts or distributes commercial programs to the homes. This company now has wired 19 schools of the Elmira City School District and in a short time instructional and educational programs will be broadcast to the schools as well as the homes.

The same thing is happening in Ithaca where 12 schools are on the community cable system which serves the home. In Corning there are 16 schools, both public and parochial, tied to the same commercial cable company that services the homes. So cable has served extremely well in all of these instances.

In addition to cable point-to-point microwave is another means of interconnecting buildings. Of course, as more and more buildings need to be interconnected you must duplicate the microwave receivers. These are expensive. I guess the going price per station is about $5,000. Consequently, in many of the school districts, where distance is a real problem in connecting the schools with the studio facility, the economic feasibility of either cable or point-to-point microwave was out of the question.

Educational television, therefore, was in a very difficult financial situation. About a year and a half ago the FCC suggested creating a new service just for schools and educational institutions of higher learning. This was an exciting thing for the State because we fully realized that we were being stymied in our efforts to promote what was considered to be a very useful and exciting teaching aid in the schools. We looked with great interest at Dalton Levy's experiment. As a matter of fact, we supported his experiment with money and consultation and were quite enthusiastic when the first 2500 megacycle emanations were viewed. The system worked well. It seemed to be within the economic capability of most school districts so another useful and exciting tool was possible for districts.

One exciting thing about this facility was that it combined a very high level of efficiency with a commensurate level of economy. The number of miles or distances between buildings is no longer a prohibitive factor. At least the problem has been minimized. The problems of maintaining machinery and equipment has been minimized because of the simplicity of the system. In fact the first year of operation in Plainedge required very little maintenance for transmitting. In effect, FCC was saying to educators that they could own a television station and have multi-channel availability that other forms of transmission cannot offer with the exception of cable. On September 9, FCC published the rules for Instructional Fixed Service whereby any school district could apply and receive permission to activate as many as 5 channels for use in that particular district. If the demand for channels increased and there were more channels necessary, more channels could be granted upon additional application. And interesting, too, is that to add up to four channels the only requirement for the educator would be to add transmission facilities. Therefore, the expense of these additional channels would be considerably lower than for other means of transmission on a multi-channel basis.

There is a pleasant as well as exciting combination of economy and service offered by 2500 megacycle or instructional television fixed service as the FCC calls it. It is combination that certainly can be afforded by most school districts, combination that will provide as much service as is needed at a cost which is not prohibitive. One of the most exciting and interesting aspects of the FCC rules for this type of transmission facility is that the amount of personnel required to operate the system is at a minimum. As you know, in broadcast television there is a requirement for a transmitter engineer, a studio engineer and all kinds of engineering services. Their function is to see that the level of transmission is kept at an optimum point throughout the broadcasting day. This service costs a great deal and so is a great problem which face the owners of stations. Engineering service is costly and sometimes it is hard to find.

However, with 2500 megacycle transmission or instructional television fixed service the only FCC requirement for personnel which a school district would have to comply with is the one for the operator, or operators of the system. The person must have a third class radio-telephone license. This person must have a knowledge of the broadcasting laws such as the one having to do with profanity or obscenity. There is no requirement for the person operating the system to have an engineering background or proficiency as there is in the broadcast field. The regulation states that a person of a certain engineering competency must check the system periodically. For example, once a month someone must check to see that you are not drifting off frequency. This can happen in any transmission facility, and the engineer may be on call or may be contracted for. Certainly it does not have to be premanent staff although if there is someone on the staff who has this proficiency all the better.

The type and quality of equipment is also very favorably presented within the FCC's rule for 2500 megacycle transmission. There are really no minimum requirements on the type and character of studio cameras, and other origination equipment except that they be of the EIA standard. EIA standard is one which applies to the syncronization pulses which govern the response of the cameras and of the studio origination equipment. Industrial cameras such as the type that Sylvania and Argus Companies produce are not, at present, compatible with FCC rulings. Most equipment now being produced for studio emanation is of this EIA standard providing a wide range from which to choose, from $10,000 up to $40,000. To be sure, the FCC has been very lenient with educators realizing that there is an expense consideration. In establishing such a system, thought and appreeciation has to be given to the educator's ability to buy equipment, so that almost any equipment with EIA standards is accepted for use in originating programing through this 2500 megacycle transmission system.

Now, another point that should be noted here is one that is easy to overlook. The FCC states that if a school system operating the 2500 mc transmission facility is not using it for classroom teaching--either after school, before school, or at lunch time--certain entertainment programs may be broadcast. Noontime movies or talent shows are approved by the FCC. If a superintendent or some administrator in another district desired to have a meeting by television where teachers could not come to a central point, the use of 2500 mc transmission system in this sense would be acceptable. In other words the superintendent could have his meeting on the air. The FCC also rules that in addition to having certain entertainment programs and administrative traffic such as faculty meetings, conferences, etc., that the system can be used for transmitting reports and documents.

If, for example, the guidance files or other informational files of the district were centralized, a teacher or administrator might call and ask for the document to be televised. A guidance record card conceivably could be placed in a position in front of the camera and the image of the card could be transmitted to the receiver in another school where the person interested would be waiting to receive the information. To alleviate fears that confidential documents be received in the wrong persons it should be pointed out that the 2500 megacycle transmission is receivable only where the receiver is equipped with a master converter which converts the 2500 mc signal to 54 megacycles up to 800 which is the VHF band. In the future, of course, it may become advisable to equip some homes with this service.

There are possibilities for adult education via 2500 megacycles. There are possibilities for the home bound student coverage by 2500 mc. To be sure the electronic home and the FCC are not overlooking this. If such is the case, this service of providing programs for home bound children or adult learners at home, the time will come when converters will be made available to homes. This already is in the planning stage and we are on the threshold of a very marvelous era using the 2500 mc transmission facility. For the present time it is suffice to say that if we can develop the school use of this medium it is an important step in adapting to educational technology.

HELPING TEACHERS TO UTILIZE TELEVISION

Kathryn Hearle, New York City Board of Education

Most educators agree that television is one of the most powerful devices of mass communication. Thus it is essential for us to explore ways of helping teachers improve their use of this audio-visual tool for more effective instruction.

Included in our present methods of instructing teachers in New York City on television utilization are: conferences and workshops on the district and school level; audio-visual in-service courses by TV and by class meetings; special projects involving TV (closed-circuit TV, team teaching, UHF film chain, 6th grade science TV and class lesson package); ETV guide page of A-V learning, BAVI quarterly for school supervisors and coordinators; and the reviewing and reporting "feed-back" to TV teachers. These, then are some of the means we have at hand to help our teachers improve their TV learning situations.

I. CONFERENCES District - for school supervisors and A-V coordinators, faculty and group - for teachers

A. To familiarize teachers with the physical aspects of TV utilization BAVI has produced and distributed to each of the 836 schools in the city a copy of

A black/white filmstrip & guide	"Setting up for Classroom TV"

Theme: The most effective approach to ITV is one class viewing the program in its own room. Since good viewing and good listening are the primary keys to TV learning situations, we must set up our TV situation to insure a clear picture (without distortion or reflection) and an adequate accompanying sound.

Content: The correct placement of the set with regard to light, horizontal and vertical viewing angles, maximum and minimum viewing distances for seating students.

2. Adjusting the controls, with consideration for turning the set on, controlling the volume, VHF channel selector, fine tuner, contrast, brightness, echo, and vertical and horizontal hold controls.

3. Orienting the antenna, with consideration for rabbit ears and antenna table legs.

4. Tuning for UHF, including the channels involved the external converter and antenna, and the all-channel receiver.

5. Correct storage of television set.

6. Trouble-shooting. Considering some common faulty receptions, and how to overcome, or arrange for repair.

7. Summary and Review.

B. To promote more effective learning through good pedagogical practices, BAVI has developed and produced for each of its 12 field supervisors for use in 23 school districts

A set of 15 large projectuals & guide sheet	"Good Practices in ITV Utilization"

Each of the projectuals for use with the large transparency overhead projector directs the teacher's attention to desirable TV utilization practices.

PROJECTUALS

1. Guide Lines for School Supervisors Personal INVOLVEMENT by:
    a) Being aware of the programs offered on WNDT.
    b) Encouraging familiarity with manuals (conferences and demonstration).
    c) Giving high priority consideration to TV sets in the annual equipment request questionnaire.
    d) Providing proper facilities for classroom viewing (Show and discuss BAVI filmstrip "Setting Up for Classroom TV").
    e) Continuing attentive supervision of scheduling the total ETV program and stressing classroom supervision with special ongoing convern for pre-telecast preparation and follow-up activities. Prevent the hit-or-miss and haphazard viewings which are unrelated to previous learning.
    f) Reviewing the programs with students, teachers and supporting feed-back to the TV teacher.

2. Guide Lines for Teachers

Determining factor for classroom use is PURPOSE.
Many teaching problems can be solved by proper utilization of television programs.
The teacher may be concerned with skills, knowledges, attitudes, values, understandings of appreciations.
By proper training sessions, the teacher must become familiar with the basic mechanics of utilization.

THE TEACHER'S BEST FRIEND IS HER MANUAL FOR TEACHERS

3. MANUAL FOR TEACHERS CHANNEL 13/WNDT School Television Service

Directs the teacher's attention to correct practices:

1. Gives an overview - enabling proper selection of programs.
2. Helps teacher formulate aim of lesson - points up specific basic elements.
3. Suggests pre-telecast "readiness" activities.
4. Lists follow-up activities to help reinforce the TV learnings.
5. It indicates the materials the students must have during or for follow-up activities.
6. It shows the term schedule - valuable so TV is an integral part of the curriculum.

4. Selection of Programs

A teacher may select one individual program from a series or a unit from the series, or she may wish to use all the programs of a series.

A television series may:

a) Reinforce the pupil's classroom experience,
b) Introduce a new topic from which a classroom teacher may proceed to her lesson, or
c) Function as a culminating lesson for the teacher's classroom work.

5. Pre-telecast Activities

Discussions	Experiments	Reviews
Demonstrations	Collections	Examinations

ALL purport to make the telecast more meaningful!

6. During the telecast

Observe the lesson with the class. Be attentive.
Watch the reactions of the class, as well as the program.
Participate in the lesson (if directed to do so, student activities).
Supervise class participation.
Make notes of class difficulty for later clarification.
Capitalize on special interest for directing class projects.

7. Follow-up telecast activities

Follow suggestions in Manual for Teachers.
Foster new ideas in language arts (letters to telecaster).

Reading	Recording	Discussing
Collecting	Improvising	Planning trips
Constructing an exhibit	Experimenting	

8. **Reviewing and reporting programs**

   Copy of the Bureau of Curriculum Review Card
   Annual WNYE Survey - excerpt

9. **Who listens?**

   Diagram of Radio and TV Council
   ---with their chief functions
   Diagram of Radio and TV Panel

10. **Keeping up** - ETV Guide of A-V Learning (BAVI Quarterly)

11. **Keeping up** - ETV Guide of A-V Learning

12. Schedule of "Utilization of A-V Media in the Classroom" Spring TV course

13. Excerpt blow-up showing three lessons on TV
    - Teaching with TV
    - Using television in the classroom Part 1
    - Using television in the classroom Part 2

14. **What TV Can and Can't Do**

    Recent team-teaching analysis of TV roles/teacher roles

15. **Do they really learn?**

    Recent research findings

II. IN-SERVICE COURSES

A. "Utilization of A-V Media in the Classroom" to be given this spring on television. By directly involving the teachers in learning by television, we hope through 14 lessons to reinforce the basic principles of good practices. Three of the lessons are on utilization of television. We are planning to use live telecasts of classroom demonstrations to point up the principles involved in selection, preparation, follow-up activities on the various levels of instruction.

B. Five other audio-visual courses are being conducted, and usually TV has one session for a thorough examination of utilization.

III. SPECIAL PROJECTS

A. Closed circuit - 1 large school, each with a classroom TV set
   - 9 minimal rig, single camera experiments

B. Team Teaching - some 50 schools

C. UHF Film Chain - 50 Jr. H.S. experiment

D. 6th grade science TV and Class Lesson Plan package - 600 elem. sch.

Whenever teachers are directly involved in cooperative planning for television, they are most aware of the need for "'getting their classes ready', for having teacher and pupil materials ready to use during or after the TV lesson and for planning activities to enrich or supplement the TV offerings and for providing for the range of abilities of children in their classes"....USING CCTV FOR MULTIPLE CLASS INSTRUCTION, recent report from PS 33, Manual

IV. ETV GUIDE

Regular page in the BAVI quarterly "A-V Learning." Supervisors and A-V Coordinators are given frequent articles on television utilization. Recent issues have dealt with a self-rating questionnaire on physical and pedagogical principles, guides lines for principals and teachers, present ITV fare, research study quotes and reports, practical information on delivery, repair and storage. We are hoping to have soon "Birth of an ITV Program," and "The Art of Reviewing a TV Program."

V. REVIEWING/REPORTING FEEDBACK

The Radio and Television Panel of the Bureau of Curriculum Research has designed a form for reviewing broadcasts and reporting reactions. Such items as pacing, vocabulary, audio-visual materials, interest sustained, establishment of rapport with pupils, content suitability to grade/age level, helpfulness of guide, whether the broadcaster used materials not easily available to teacher, or if the broadcaster did anything a teacher could not ordinarily do, whether the broadcast provided for improved teaching practices, if it provided for problem solving, development of appreciation, critical thinking, or factual information. Also asked are questions involving pupil activity, "springboard" value for other lessons or activities, specific learnings, suggestions and comments. Such a review/report has a two-fold value. Teachers who once seriously consider these items related to a school broadcast will certainly have an enlightened appreciation of telecast lesson potential. Also when these reports are reviewed by the Radio and TV Panel, programs can be modified in midstream so that they may be more useful for the classes for whom they were designed. The annual survey conducted each spring by WNYE regarding the numbers of classes viewing the different programs and directing the supervisor's comments toward meaningful criticism and suggestions for the future makes school personnel feel they have a share in the responsibility with the Radio and TV Council for planning future programs.

VI. FUTURE PLANS FOR HELPING TEACHERS IN THE BETTER UTILIZATION OF TV

1. After the spring TV course given by BAVI, we hope to have kinescopes of the sessions on television utilization available for future in-service courses and for district and school conferences.

2. Films on television utilization, incorporating demonstration lessons, may be produced as their value is indicated.

3. An Institute on Television Utilization is in the planning state. This will be used for borough-wide teacher training.

4. We are anticipating the use of 6 pilot demonstration kits of filmed and published materials illustrating television utilization of broadcast materials which was a project of the National Association of Educational Broadcasting, under the supervision of the Office of Education. These kits which were to have been completed and circulating this fall are entitled:
    - Educational Broadcasting
    - Good Teaching and Communication
    - Preparing the Educational Program
    - Selecting and Utilizing the Program
    - Motivating the Elementary Grade Learner
    - Motivating the High School Learner

There has been much resistence to learning by television on the part of many teachers. However, much time, effort, thought and money have gone into the establishment of high quality ITV programs for school children of this state. Let us now, as supervisors, help our teachers apply the best techniques of utilization to insure maximum learning through purposeful television lessons.

AN ADMINISTRATIVE GUIDE FOR EDUCATIONAL TV

Ray Kuipers, Clarion State College, Pennsylvania

I. The Crisis in American Education

A. Quality education versus an exploding population

Every educator in America without exception, I believe is familiar with the problem of expanding enrollments. Most of America's schools and colleges are literally bursting at the seams. Even the public is aware of this population explosion. The Columbia Broadcasting System as far back as 1960 put on a documentary program on the subject of population explosion. While education during the past 20 years has been presented with more and more customers, we have not made it attractive enough as a profession to attract more and better teachers to come in and handle these additional customers. Almost in desperation, administrators in public schools and in colleges and universities across the nation have been turning to educational television as some sort of Aladdin's lamp to help them solve the sheer crushing problem of numbers.

I am not here today to advocate that TV should be used or even thought of as a panacea for all of our educational problems. We know that there are certain things that can be done by way of the medium of educational television and can be done well. For example: for a number of years the United States Army, Air Force and Navy and many of our major universities have proven with extensive research that by careful, thoughtful use of educational television and the very best of professional teaching talent, we can extend quality education to a larger number of students than we ever before thought possible. In short, by employing the technology of educational television, we can serve a larger number of students without materially affecting the quality of instruction.

II. What can Educational Television do for Your Educational System?

(The contributions of modern technology to education)

This is a very broad subject and I could go on at length about it, but I'll try to be brief. Modern technology enables our teachers and college professors to have direct eye contact with each student in the class, because when the teacher talks directly into the lens of the camera, the student at his viewing monitor has the feeling, in fact the complete assurance, that his teacher is talking exclusively to him. When science demonstrations are presented, or any material that you want the student to have a close-up view, the television camera, employing an optical lens, makes it possible to move in very close and show the student a view that he could not see with the naked eye alone.

May I leave you with this thought. If we paid half as much attention and used a fraction of the technology for teaching our students as we do in beer and cigarette commercials on television, we could have a phenominal improvement in our level of instruction.

III. How to Select a Consultant

I believe that this is a very important function. Although you people are the experts in the educational communications field you have been trained and have spent your entire lives learning how to handle mountains of paper, personnel problems, classroom and administrative problems. You should not expect that you should be an expert in the field of the production of educational television programs; and you should not expect that you should become electronic engineers. There are such people available in the country. There are the real good ones, and there are the real phony ones.

First of all, do not confuse the representative of a manufacturer--in this case let's call him an equipment salesman--with a television consultant. (Some manufacturers have people on their staffs who are consultants.) These are men of great ability, and these men go far beyond the range of salesmen; but they are not the men who call on you to try to sell equipment.

Salesmanship has its place. But it does not have a place when you are trying to fight your way through the maze of videcon versus image orthicon, video distribution versus RF distribution and all of these words that are somewhere out in limbo in your vocabulary.

There are two types of television consultants you may wish to select. If you take the long view of the impact that you want television to have on your organization, you will want to go out and find a man who is an educational television consultant. The man should have his doctorate in the field of education and have experience in teaching and administration. He should have experience in working with a number of architects and engineers. He should know the language of education, the language of architecture, and the language of engineering, because these are the things that are involved.

If you are of the mind that you do not want anyone to help you with your educational problems, if you only want someone to help you solve your technical problems, you can bypass a man of this caliber and go directly to hiring a man who is an engineering consultant, and this is certainly better than not hiring a consultant at all. The engineer should have a background in broadcasting and if possible a background in the installation of educational television systems. He should be able to write performance specifications so stringent that you get equipment that will do precisely what you want it to do.

I think it is obvious from my remarks today that I would advise you to hire an educational television consultant turn over your worries to him and let him select an engineering consultant. These men will probably command aper diem that sounds like an exorbitant amount of money. I assure you that it is well worth every penny. Actually what it amounts to is that you are paying the man for piece work. You are only paying him for time he is actually producing for you. In a few days of a man's time you can have the benefit of experience that it has taken him years to gain.

You will notice in the sequence of things, that I have advocated that you select your consultant early in the game. He should be in the initial planning stages with you as you develop your program. Only in this way can he understand completely your objectives and really serve your needs.

IV. Let's Take a Look at Our Objectives

Why are you considering employing educational television? If you decide to use educational television how do you want to use it? What do you want it to do? As to why use educational television, there should be only one reason--to improve the quality of instruction!

Often another reason does crop up. There is a feeling on the part of administrators that they can effect certain economies by using educational television. If this is your honest need, then admit it--admit it to yourself and to your consultant and design your program toward these economies. But for pity sakes, let's not cut the economy picture into such little pieces that there is nothing left over for a quality education.

Whatever your objectives for the use of educational television are, they will grossly effect the nature of the staff which you will need to employ and the nature and quality of the equipment you will need to buy.

V. What is the Cost of Our Present Methods of Education?

Present education is not cheap. For example, at our particular college we made an analysis of what it cost for a college student to go into our laboratory school and view for one hour the activities in a given classroom. We came up with the astounding fact that it was costing us ten dollars per hour per college student for observation in our laboratory school. To sum up a further part of the study, we took the cost of television equipment required to view laboratory classes, staff to run the television set-up, the same supplementary salaries of the demonstration teachers and the cost factor came to something like $2.05 per student per hour because we could work with 200 students at one time instead of 20.

The present cost of education in your school or college can be figured in a like manner. Once you have done this, you can concern yourself with the next step.

VI. A Cost Analysis for Employing Educational Television

You do not have to be an accountant to find out what educational television is going to cost you. You can sit down and itemize your equipment, your teacher's time, your technical and production staff, add them up and divide by the number of students who are going to participate in the television teaching-learning program and you come out with a cost per student, per hour for your instruction. Now for me to stand here and tell you that educational television is cheap would be ridiculous. Many state colleges and schools from Penn State here in the East to San Jose State in the West have analyzed the cost of television and they find that somewhere around 235 to 250 students enrolled in a television section is considered the break-even point. Any number of students over and above that number actually cost less per student hour of instruction on television than it would by the normal classroom techniques of conducting your educational program.

VII. Where Does ETV Fit into the Administrative Structure?

Dr. Armand L. Hunter in the August, 1961 issue of the Journal of the NAEB wrote an article entitled, "The Way to First Class Educational Citizenship," and his subtitle is "Communications Experts Need a Center for Coordinating Resources." In his introduction he points out that we are long past the gadgeteer technician stage in ETV. And he talks in terms of a learning center that would encompass the whole communications and technological complex devoted to the learning teaching process. He advocates that the library, instructional radio and TV, film, graphics, AV communications, language laboratories, teaching machines, and other related materials be grouped together. In his design the administrative head of this communications center should be a dean or have the equivalent status. By putting ETV in such an administrative framework you leave the people free to exercise their best judgment, and they do not become part of what I call "petty departmental politics."

In my home state, the bureaucratic hierarchy is such that the man who is responsible for educational radio and television reports to a boss who is director of mass media, who reports to a man who is assistant superintendent, who reports to the state superintendent of schools who in turn tries to interpret the program to the administrative officers of the Governor's cabinet who (and this is usually the budget director at this point) try to interpret the problem of educational television to the legislature. You can see what might happen. Years may go by within the state and not much is going to be done because the administrative hierarchy is so constructed that the television people never really get out of the red tape to the point where they can get something done.

VIII. The Selection of Personnel: A Criteria for Excellence

I suggest to you that when you are selecting your personnel to operate your television installation, you look for professional people who have the highest academic and experiential background, that you be willing to pay premium dollars to bring these people into the organization, and that you support them. Only in this way can you fully exploit this thing we call ETV.

One of the reasons that the commercial broadcasting stations of America have been so successful in programing is that they are quite willing to go out and compete for the best brains to run their operations. It has long been the picture in education that you buy the absolute minimum. In ETV, for example, you go out and hire a technician, someone who has been repairing television sets in a local shop and pay him four or five thousand dollars a year. Then you wonder why he does not have the competencies that you need. Actually you do not wonder! What happens is you start damning ETV and say it isn't any good. It can't do this, it can't do that. Actually, you know, ETV can't do anything. A TV set is just a glass tube with an electron beam that bounces against the phosphorous screen. A TV camera is nothing more than an optical instrument where the electron beam scans back and forth across the picture tube. The amplifiers and control equipment that goes in between these and constitute a camera chain are completely inadequate and unable to do anything. Of itself, TV can do nothing. It can only relay what the brains of creative, imaginative, capable people can think up as a way to use TV to improve our educational picture.

IX. Housing the Television Operation

For years now it has been the practice to take anything new like audio-visual education or educational television and put it down in the basement, in the attic, out in the garage or barn until it has proven its worth. Educational television, to be a good program needs proper housing. It will need adequate floor space, it will need adequate electric power, it will need a room with adequate ceiling height. It needs a good smooth floor that you can roll a camera over. It needs air conditioning so the people can work without suffocating. You need more than just a television studio, you also need a master control room for housing switching and taping facilities, you need adequate space for your engineering staff so they can have offices and work space for the repair and maintenance of equipment. You need to think in terms of a space that you would call a set and scene shop where you can build your sets. You need to think in terms of a graphic arts room and adequate dark room facilities for film processing.

An area that is grossly overlooked in American education is space; space where your talent, your teachers, can meet with the producer-director, the man doing the art work, and the control engineer. It is in these conference rooms that real creativity takes place. Another area needed is a quiet corner for the teacher--a place with a desk, perhaps a tape recorder, a typewriter, or secretarial assistance--a place where the teacher can think and get the program scripted.

You must also consider storage space. Provisions should be made for a reference library which is storage not only for books but also for ideas, graphic materials, picture files, art work. You need storage space for your sets and props so that once they have been used they need not be destroyed but may be reused by merely giving the prop a new coat of paint. These are economies that can only be effected if you have some place for storage.

Lastly you should consider a reception area so that you have a place to bring your VIP's, and believe me, the minute you bring ETV into your program you are going to have people who are interested, who are going to visit to see what you are doing. You will sooner or later find that you will have to adapt even the problem of space for the exact job you are trying to do in ETV.

X. Quality Standards for Equipment

If I could make but one point with regard to quality standards for equipment, my maxim would be--buy the highest quality of equipment that you can afford. In fact, I would say, buy equipment of even better quality than you think you can afford. One of the big mistakes, especially in the field of ETV, has been buying cheap equipment. Inexpensive equipment will look nice in the package and in the pictures but it just will not do the job. I was arguing recently with a quasi-colleague of mine at one of our major state universities. This man, an engineer, said, "My God, Ray, what are you trying to do? You don't need equipment that good. Where do you think you are, NBC in New York?" and I said "No, I have a very important job to do and it is much more important than NBC in New York. People of the National Broadcasting Company are merely trying to entertain the people of America. We educators have the job of providing information and an environment where people can learn. And we can't tolerate second rate equipment."

All too often well-meaning people have been literally taken in by a clever salesman to buy TV equipment that is not up to quality standards. I cannot arbitrarily tell you what the quality standards should be for you. This is why you hire a consulting engineer. It all goes back to what you want the camera to do. If you want to buy a TV camera to sit outside and count the number of freight cars in a railroad terminal, this camera does not need to be very expensive. However, if you want to buy a TV camera that will show a delicate, minute experiment in science and have each detail faithfully reproduced, then you are going to need a much better camera indeed and it is going to cost you many many more dollars. Your engineering consultant should help you to design specifications that will meet the highest quality standards for equipment. If your quality standards are high, you will find that your specifications are written so that only three or four corporations in the world will be able to bid on this equipment.

Good television cameras are not cheap, good television monitors are not cheap. If it is your choice between buying two inferior cameras and one that is of excellent quality, buy the one good one. The same holds true for microphones, audio equipment all the way down the line. A cheap microphone will pick up the noise, yes, but you want to pick up intelligence. The audio becomes a very important part of television and is often overlooked so high quality standards will need to be maintained for both video and audio gear.

XI. How to Design an ETV Proposal for your Governing Board

Boards of Education, Boards of Governors of colleges and state boards of education are made up of busy men. This sounds like a cliche' I know, but they are busy men. People are constantly pounding on their doors requesting money for all kinds of projects. Now, you know that some of these ideas get beautiful support, others just die on the vine. If you want ETV to get the support of your governing body, you had better take time to write an intelligent proposal. The proposal should be attracively presented, it should be kept compact. You should be brief and direct in your remarks and support them with evidence.

It is a good idea to start out with the goals and purposes of your ETV program. If ETV has advantages for doing a better educational job, or for lowering your per unit cost of education, by all means list these advantages, directly and briefly. I find that programs have a better chance of succeeding if they are planned and sequenced in an orderly manner. If you walked in to our Board of Governors and suggested they spend a quarter of a million dollars for ETV you wouldn't get a hearing. They just couldn't conceive of this kind of money. However, what we did in our proposal was to sit down and spell out an orderly logical growth over an eight year period. You need not take eight years to develop your program but try to develop your program into logical sequences where a reasonable acceptable amount of money can be spent each year. Break down on a yearly basis what you plan to spend for equipment, personnel, rennovation for existing buildings and building new facilities, and what your depreciation and maintenance costs are going to be. If you do this step by step, year by year, you can come up with a logical program that will be supported.

Remember don't hedge about the cost--don't try to hide the cost. Bring it out into the open, and these are the people you are asking to buy your product. If you hide the price tag they will get the notion that this is free. It's going to cost money, and if you present the program in a comprehensive, direct way, you can design a proposal that conveys the information, substantiates what you need with documented proof, they will be willing to pay for it. If they are not, there is no point in trying to embark on the program.

XII. Who Shall Teach? A New Breed of Teachers

Here is without a doubt the most important phase of your ETV program. You can buy the finest equipment, you can hire top notch personnel to work on your production team, you can have good administrators, excellent technicians and engineers, the finest artists available, but nothing is going to happen until you get a man who is going to do the teaching. First of all I cannot stress too strongly that the person who teaches your ETV courses should volunteer for the job, he should not be drafted.

What do we mean by a new breed of teachers? Well, I think the word ties into adaptability. We need a person who, perhaps has a little bit of ham in him. I can speak with some authority because this is one of the areas I investigated in my doctoral dissertation.

XIII. The "Question of Residuals"

Sooner or later, gentlemen, when you get into the field of mass teaching and you employ educational TV and you record the work of your teachers on video tape and you get into such things as intra-college exchange and maybe one man is teaching three or four or five hundred students on your campus, and perhaps on ten or twelve additional campuses across the country--the question of residuals is going to come up. Kenneth Bartlett, Vice-President of Syracuse University, holds this as one of the most outstanding areas of promise for education. He feels that by the equitable payment of residuals or reserved rights to TV teachers we can attract the most outstanding people in the business to teach our courses for us. I think he is quite right.

XIV. Some Thoughts on Evaluation

As you plunge your time, energy, thinking, and money into ETV please do not do it unless you are willing to give some thoughts on evaluation. Now it has been said that the old, the tried, and the true does not need any evaluation; that we accept it. We have a word that my president likes to use often; he calls it tradition. You will find that when you explore the never-never land of ETV there is not a great deal of tradition in front of you for you to rely upon, or to say this is right because it is tradition. There have been all kinds of tests that "prove" that ETV is as good as or better than classroom teaching. My only thought about this is that maybe classroom teaching has not been very good in the first place. Please take time out to engage actively in the evaluation of your television programs. Take time out to up-grade them and improve them. One of the things which disturbs me much about education is that some people who are good teachers, very good teachers, do not have the vaguest idea about how to write an examination, how to evaluate student's work, how to evaluate their own program.

Perhaps you need outside help. Maybe you are trying to teach things on television that should not be taught on television at all. Maybe you should take time out for individual meetings with your students. Maybe you should give your faculty time to meet in small groups or seminars with them. Maybe there is a good part of the content that could be programed and handled on a teaching machine or a program book.

So please be prepared with your best thoughts and techniques and personnel to carefully evaluate each program that you enter into in ETV, so that you can prove to yourself and to those who work with you the merits of this new, dynamic way of bringing more and better education to the American people.

TELEVISION UTILIZATION IN NEW YORK CITY, CHANNEL 13 AREA

Kenneth Lenehan, Bureau of Applied Social Research, Columbia University

This is a summary of a four-part report on the Regents Educational Television programs, prepared by the Bureau of Applied Social Research of Columbia University. The report is based on a mail survey of all schools--public and non-public, elementary and secondary--in 32 counties in and around the New York area. In addition, 654 interviews were conducted with teachers and principals in 206 of the schools.

An estimated 1,400,000 program exposures were reported for all the schools during the week of April 2-6, 1962. (This figure does not refer to number of pupils because some pupils watch more than one program). Science programs were the most popular with 450,000 pupils watching. The most popular single program was Time for Science with 116,300 pupils watching. The second most popular program was Tell Me A Story with 95,100.

The Regents Programs are used more widely in elementary schools than in high schools: 45 per cent of the elementary schools compared to 19 per cent of the high schools (includes junior highs).

Table 1 shows a breakdown of the schools that use the programs according to location, affiliation (public and non-public), and level (elementary or secondary).

Table 1

NUMBER AND PER CENT OF SCHOOLS USING ONE OR MORE REGENTS PROGRAMS BY LOCATION AND SCHOOL TYPOLOGY

	ELEMENTARY	SECONDARY*
NEW YORK CITY		
Public	89% (410)	57% (88)
Non-Public	24% (58)	5% (4)
OTHER NEW YORK STATE		
Public	61% (272)	19% (33)
Non-Public	24% (41)	13% (6)
NEW JERSEY		
Public	30% (191)	4% (8)
Non-Public	47% (136)	7% (4)
CONNECTICUT		
Public	17% (35)	2% (1)
Non-Public	6% (4)	- -
TOTALS	45% (1147)	19% (144)

*Includes junior high schools.

Almost all public elementary schools (89 per cent) in New York City used the Regents Programs. In New Jersey, the figure falls to 30 per cent, and in Connecticut to 17 per cent.

Actually, Catholic schools in the Newark Archdiocese showed the greatest use of TV: nearly all schools used the programs and most classes watched from three to five programs a week. Otherwise, Catholic schools in other locations used the programs less than public schools.

Some schools were handicapped by poor TV reception. This was particularly true in Connecticut, with 36 per cent of the schools reporting poor or no reception. In other locations, this figure ran from 5 to 10 per cent.

Another reason for not using TV is the lack of TV sets. Almost a third of the schools are without TV sets. And, among those with sets, many have only one which must be shared by 20 to 30 teachers. Schools vary widely in the number of TV sets they have. Some school systems supply them, others do not. In some communities, the PTA's and other organizations have supplied sets. Among public elementary schools, 42 per cent received sets from the PTA or other organizations; 49 per cent received one or more sets from their system. Some schools, of course, received sets from both sources.

Donations from PTA's and others occurred in communities that are better off financially. Similarly, schools in better-off communities were more likely to get sets from their system, except in the New York City schools where the Board of Education supplied more sets to poorer schools; that is, to schools that had not received any gifts. But, looking at all the schools in the viewing area, in terms of sets and facilities, the "poorer" schools showed the least opportunity for using TV.

Besides the lack of TV sets, the next biggest obstacle to watching the programs is the school bell schedule. In elementary schools, this is a minor problem, but it was found that the lunch bell cut the audience size in half for programs shown immediately before noon. Because high schools are departmentalized, major problems of scheduling prevent the use of Regents' Programs. Many classes do not meet when their subject is being presented on TV. To overcome this drawback, principals suggested that:

1. Program schedules be announced far enough in advance that class schedules in the high schools could be made to coincide.
2. Programs be repeated more times during the day and on successive days, and even offered after 3 p.m. and in the evening, so programs could be assigned as homework.
3. Programs be put on film and distributed to the schools for use at the teacher's discretion.

It was also found that in the New York City elementary schools where principals had some training in audio-visual techniques (teaching side), the schools made greater use of the programs. Outside the City, the principal's training showed no effect.

Among the teacher training program, Teaching Reading was the most popular in the New York City schools, with 85 per cent of the principals reporting that some teachers watched. Outside the city, in public elementary schools, Science for Teachers was the most popular. About one-fourth of the principals said some teachers watched. In schools where the principal had audio-visual training, teachers were more likely to use the teacher training programs.

Interviews with Teachers and Principals

Interviews were conducted in 206 elementary schools randomly selected from the public school systems of New York City and four nearby New York counties, and from the parochial schools of the Roman Catholic Archdiocese of Newark, the latter giving maximum encouragement to TV use on a system-wide basis. In the following pages, "parochial schools" refers to those in this system, and "public schools" refers to those in New York City and four nearby counties, and "teachers" means those in the second and fifth grades.

How Much is Watched Per Class

In public schools, sixty per cent of the TV-using second grade teachers had their classes watch only a single program, as did half of the fifth grade teachers; most of the remaining second grade teachers watched two programs, most of the remaining fifth grade teachers watched two or three. In the parochial schools of the Archdiocese of Newark, most second grade classes watched two programs, most fifth grade classes watched four or more, and this is even more than can be accounted for by the usually complete equipment of this system with TV sets.

What is Watched

In the second grade, over half the public school classes watch only a science program, and one-quarter of the public school classes and almost all the Newark Archdiocesan classes watch science plus Tell Me A Story. In the fifth grade, watching patterns are much more diverse (especially in the public schools), but science is still the front-runner by a very wide margin.

Equipment

All or most sets are moved from classroom to classroom in one-third of the New York City schools and in half of those in the nearby counties. All or most sets are kept permanently in a special viewing room in another third of the New York City schools, and in one-fifth of the suburban schools. In the Newark Archdiocesan system, 92 per cent of the schools have most sets permanently assigned to one classroom. In about half the public schools two or more classes are pooled for watching; this happens in almost none of the Newark parochial schools. These practices reflect the differences in TV equipment--96 per cent of the Newark parochial schools had a set for five teachers or less; most of the public schools only had a set for every 16 or more teachers.

Preparation and Follow-Up

About thirty per cent of the teachers reported no preparation of their classes before viewing the TV programs; the rest ranged from announcements of topics via discussions of terms to the bringing in of materials by teachers or pupils. Follow-up work after the programs was both more prevalent and more diverse.

Irregular Watching

About thirty per cent of the teachers interviewed in public schools and ten per cent in parochial schools had not watched their TV program regularly throughout the term. Of the teachers who had missed a showing "last week," 40 per cent gave as the reason that they had given up regular viewing altogether, mostly because of lack of facilities, or that programs "added nothing," and the remainder had been prevented by circumstances peculiar to that week.

Non-Viewing

Half of the interviewed teachers in non-watching schools said they would use TV if it were up to them, and most of the remainder would do so provided certain conditions were met. The latter answer was also given by most non-watching teachers in watching schools, and by most principals of non-watching schools. The most frequently demanded inprovements in this connection were: better facilities or arrangements in the school; greater coordination of TV and school curricula; and more emphasis on certain subjects.

Desired Changes in Programs

All but one-quarter of the interviewed watching teachers, and all but 15 per cent of the principals of watching schools, offered suggestions for changes in programing--usually more than one--and these covered a great deal of ground. About 15 per cent of the teachers expressed concern with better communication or coordination between broadcasts and school; about 20 per cent wanted changes in the length and timing of programs; about 20 per cent wanted easier programs and almost 15 per cent wanted harder ones; other suggestions called for more visual work and less lecturing; more programs appropriate to the lower grades; more repetition, summary, or continuity; and a variety of other changes. Only about five per cent were concerned with changes in subjects to be covered or emphasized. More detailed suggestions referred to specific programs.

In-School Obstacles

In the public schools, about seventy per cent of the watching teachers and 90 per cent of the principals of watching schools mentioned obstacles to the maximum usefulness of TV which could be handled by action within the school or the school system; about half of both the teachers and principals in the Newark Archdiocesan system made similar remarks. Most frequently mentioned was the inadequate provision of sets, followed by "inadequate room or special arrangements."

Inherent Bad Points of Classroom TV

After considering possible program changes and shortcomings that could be remedied within the school or school system, there remain, in the judgment of about one third of the interviewed teachers and principals, certain drawbacks inherent in classroom TV that, presumably, "nothing can be done about." The point most frequently mentioned is the lack of feedback in televised instruction. Rigidity of schedule is next. In addition, many felt that TV was useful only under certain specific conditions--for example, only for certain subjects, for certain kinds of pupils, or with certain kinds of teachers.

Inherent Good Points of Classroom TV

Of the inherent assets of TV as a classroom medium (as opposed to features associated with the particular content of what has been put on the air), the most frequently named was TV's ability to overcome the physical limitations of the classroom, by making possible the use of expensive equipment, the exhibition of involved demonstrations, access to scenes in distant places, and so on. Close seconds are: the TV screen can expose the pupil to more expert teachers; the TV experience is likely to be dramatic and motivating. Some comments referred to what TV does for the teacher, rather than directly for the pupils: it breaks up the day for the teacher, provides hints about teaching procedure, or enriches teachers' knowledge.

"KINESTRIP" FOR VIDEO RECORDING

Herman London, Hunter College

By now everyone knows that a kinescope recording is a motion picture film made from the face of a television monitor via a highly technical and somewhat expensive process. Everyone also knows that "slidefilm" is the name the business world uses to describe a filmstrip with accompanying sound.

A "Kinestrip"[1] is the term and technique developed by Herman E. London, Audio-Visual Coordinator of Hunter College, to indicate a sound filmstrip of educational television program content.

The basic equipment needed includes a half-frame 35mm camera with cable release, close-up lenses, good quality TV monitor, solid copying stand, exposure meter, audio-oscillator (beeper) and stereo tape recorder. Optional equipment for automatic playback would include a synchronizer, stereo tape player, and remote control filmstrip projector.

Setting up the equipment merely involves mounting the camera with its close-up lens on a horizontal copying stand, facing the television image. Using ground glass or etched plastic carefully focus the camera before loading with film. Set the shutter at 1/30th of a second or slower (1/25th). Let the sensitivity of the film you are using and the exposure meter reading from the face of the picture tube be your guides to a proper aperture setting on the camera.

Two patch cords feed the stereo tape recorder. The television "audio" goes to track A and the "beep" goes to track B.

While you are rechecking the entire audio and video set-up you might reconfirm your understanding that any "off-the-air" (as contrasted with closed-circuit) recording involves copyright. The responsibility for obtaining copyright clearance from the TV station rests squarely with the person making a recording.

The video director in the studio calls the shots and your close attention to the content of the program will lead you to clues and help with the non-uniform timing of your photographic shots. Start with a title frame. Then as each successive frame is shot, press the beeper button. Continue doing this through a sequence of meaningful scenes up to and including "The End" titles.

Have your film processed but instruct the laboratory not to cut the 72 frames into slides, but to leave the film intact as a filmstrip. (The choice of black and white film processed for "reversal" or color slide film is left to the experimenter.)

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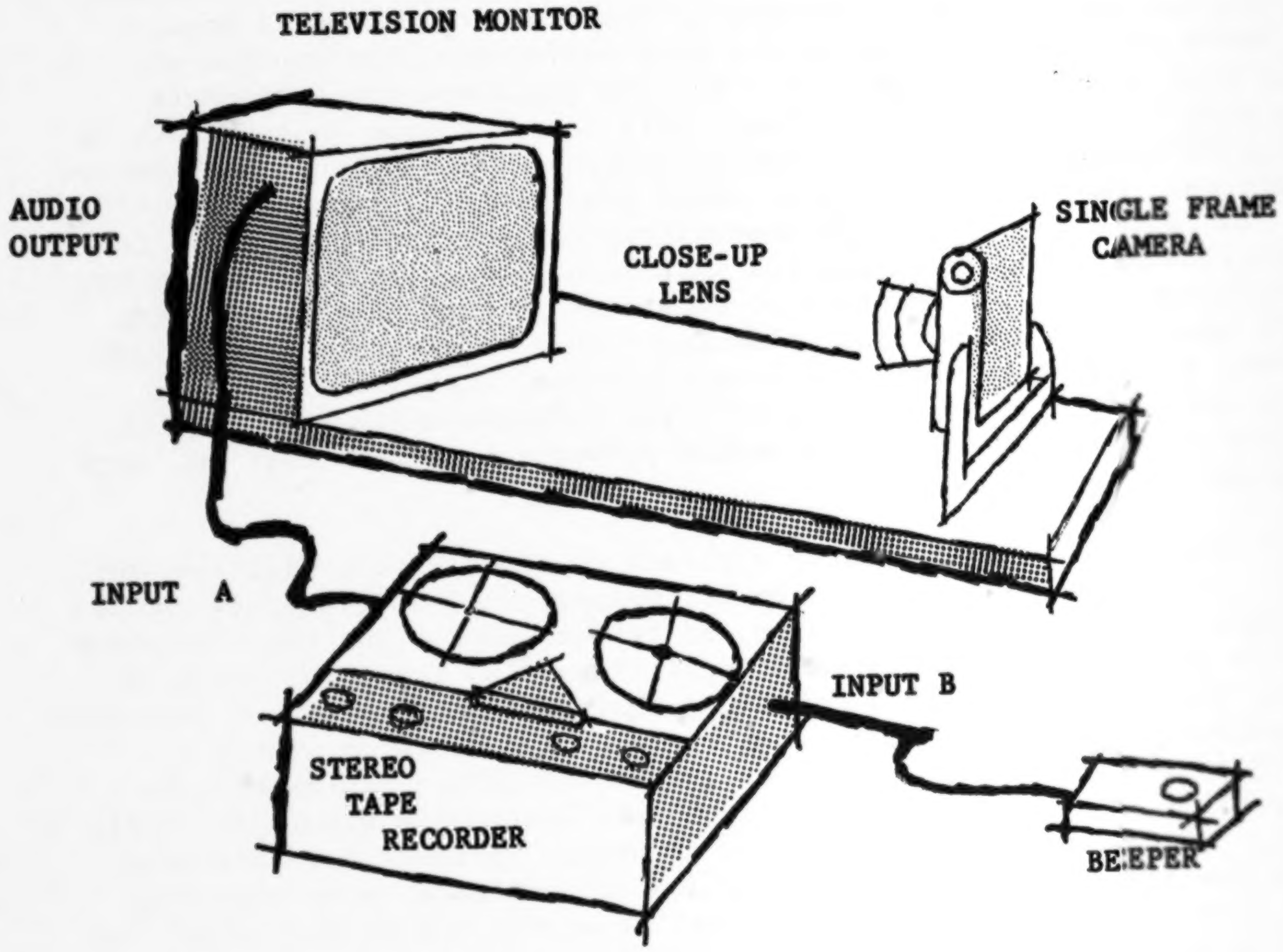
[1] All rights to use the word "kinestrip" are reserved by the inventor of the term.

Upon playback, two approaches are possible. If one does not have a Synchromat Automatic filmstrip projector, a manual technique is used. While the audience hears the sound from tape track A, the projectionist hears the "beep" from tape track B and advances the filmstrip appropriately.

The "Kinestrip" is in the process of being perfected.[2] It is not to be judged alongside a kinescope just as audio-visual specialists have cautioned us not to consider a filmstrip as an inferior, cheaper motion picture. The writer contends, however, that most educational television programs he has observed have little or no "motion" inherent in the teaching presentation. Research of the past has validated the effectiveness of the sequence of still shots. The writer is convinced that the kinestrip may be the answer to a small school's television recording problem.



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[2] At least two dozen minor technical considerations have been omitted from this very brief discussion of "Kinestrip" recording. Herman E. London, Audio-Visual Coordinator of Hunter College of the City of New York can be contacted for further details.

ETV FOR EDUCATORS

Phil C. Lange, Teachers College, Columbia University
Sanford M. Levene, Bronxville, N.Y. Public Schools

We believe that teachers become better consumers and patrons of educational television if they have had a successful experience in preparing and producing a telecast. It has been our experience, however, that very few teachers want to begin by enrolling in a television production course. The ordinary teacher has neither the interest nor the time to make that initial investment; instead he wants an EASY ENTRY to TV production--an economy or compact version. He is reluctant to dive without first having tested the water. If he finds his first sample satisfactory, he may venture in more deeply. Five years ago we designed for such teachers four hours of abbreviated instruction which in two sessions enabled inexperienced groups to become acquainted with TV studio facilities, to plan their own production and to produce it. Quite naturally this approach was labelled Instant TV. It is Instant TV that we will describe in the following paragraphs.

Educational TV productions can become time-consuming, meticulous affairs, much rehearsed and peopledexclusively by master teachers and TV specialists. There is a necessary place for such perfection, the expense and tensions that usually accompany it. But for beginners the atmosphere must be more relaxed, more accepting. This does not mean that quality is forgotten in Instant TV nor that the discipline of effective communication is abandoned. Participants will do their best within stated limits; and in most instances the Instant TV productions are surprisingly good. Occasionally we have been disappointed in a production; but the problem has never centered on the new mastery of equipment as much as on overcoming poor old habits of instructional planning. When a telecast has been poor it becomes the basis for learning from a critical analysis of causes, failures and criteria. Most frequently the enthusiasm for working with television as a new, non-erasable medium produces telecasts that are very good indeed.

In brief, Instant TV is a two-step approach to television production for novices. Usually we have from 30 to 50 inexperienced participants who are formed into three or more production and talent teams. The first two-hour session is phased for three kinds of activities: (a) review of expected outcomes, and orientation to facilities, equipment, and roles and functions of the different members of a production crew; (b) decision making on telecasts to be produced by the groups, and volunteered assignments to these specific roles; and (c) planning by the respective groups for their telecast. The second two-hour session is phased so that while one team presents its telecast the other groups are the audience, with each production team taking its turn. The actual telecasts are usually timed for 10 to 20 minutes, allowing additional time for some changing of settings and last-minute skill development with the equipment. We have usually planned three such telecasts and a short concluding critique in this second session.

Admittedly this sounds like too much to attempt in two sessions. When it worked so well for us the first time, we gave a great deal of credit to luck and to the enthusiasm of the participants. Now that we have provided this experience to over 500 students, we still credit the enthusiasm while giving more credit to the self-discipline which people will bring to a production and while giving more importance to the Television Production Guide which makes our procedures explicit.

Several other instructors have made use of this capsule approach to TV by incorporating Instant TV as a unit within their course, or as a supplementary activity. Consistently the results were surprisingly rewarding to them. People with more sophistication about communication media and TV production. some starting with scepticism about this quickie business, have also been enthusiastic over this effective but limited introduction which develops a minimum of skill while developing long-lasting favorable impressions.

In the beginning a group of graduate students at Teachers College, Columbia University, enrolled in a course in problems of teaching, had wanted to know more about television production--but they would budget only four hours for it. This strong but limited interest at least gave us a starting point. We also had available a closed-circuit television studio and a staff member (Mr. Levene) who was thoroughly familiar with the studio's resources and experienced in more conventional ways for teaching television production. We decided that the best way to use four hours was to put participants directly into planning and producing a telecast, being both their own talent and production crew. Mr. Lange re-scheduled his graduate course for two two-hour sessions in the television studio. Mr. Levene prepared a Television Production Guide especially for this Instant TV approach. (This Guide was subjected to refinements and recently made available from the Bureau of Publications, Teachers College, Columbia University, 50¢ each in minimum orders of 10.) Mr. Levene's Television Production Guide serves both: (a) as an organization outline for a talk-through introduction at the first session, and (b) as the participants' study material between sessions.

Our plan called for one TV technician (Mr. Levene) and one instructor (Dr. Lange); all other roles and functions would be assigned to the participants. Our TV technical expert would explain the TV facilities, equipment and roles; our instructor would be concerned with the content of the telecast and the format of its presentation, and would induce the essential kind of "volunteering" that would result in everyone being assigned to a responsible role in one of the TV productions. We planned for two cameras manually operated. The basic membership of a production crew would include: Director, Program Assistant, two cameramem, Audio Engineer, Floor Manager, Boom Man, Film Man, and additional assistants for preparing or handling visuals and props as needed. Those who were to perform before the cameras were identified as Talent. One of this group, usually the Director, becomes a Scriptwriter. This whole group would constitute a team, with the Director put in charge of the production of his team. We planned for three telecasts for the second session; thus all explanation, job assignments and program planning would be telescoped into the first session.

The Television Production Guide has served as an effective way of pacing the introduction, emplanation, and assignments to specific team roles. It is organized around seven questions:

A. What are the basic educational television formats?

B. How do you plan an educational telecast?

C. What are the terms I will need to know and use to write a script-run?

D. What does a script-run look like?

E. In order to produce a telecast from a script-run, how many members are there in a production crew and what are their individual responsibilities?

F. What are the terms used by the director to communicate his wishes to various members of his crew?

G. What are the special things to remember when preparing your script-run?

In the first session the participants know what help they will get from the Guide and the terminology on which they should practice between sessions. When it comes to volunteering in this first session there is usually some hesitancy until the ice is broken; but this usually comes easily enough if there has been enough discussion of what kind of telecasts are possible, reasonable, interesting and appropriate to the talent-resources of the group. The listing of jobs to be filled usually brings forth volunteers for most roles. The variety of posts is some advantage. When the groups plan their talent, the responsibilities that were attached to the volunteering become more real. At this point in the first session some members have a more real interest in what they will have to do, and want on-the-spot explanation and practice with a camera or control panel. Mr. Levene would be at hand to give this help and preliminary experience on the equipment. Mr. Lange would be mother hen to the Talent. At all times we were careful to impress upon the various parts of the production team the need to keep their actions coordinated.

Because the groups knew that they were on their own, they have consistently reached a working plan in their first session. This means that some tasks may have been assigned for accomplishment between sessions--like the writing of the final script, the preparation of visual materials, etc. They have come to the second session ready to try out a performance. We make some time provision for trying out the beginning before "going on the air"; but we have not expected a complete rehearsal, for obvious reasons of time limitations. This puts added importance on careful planning.

Here at this Communications Convocation, with slides and overhead transparencies we are preparing to show you scenes from Instant TV, to visualize its setting, to mention the Television Production Guide, and to answer questions you may have. We feel that this kind of pleasant introduction of TV production for teachers does have real merit, and it might very well be used more widely.

Excerpts From Levene's Instant TV

(Television Production Guide)

Note: The Guide is printed on 8-1/2" x 11" punched paper ready for insertion into a two- or three-ring binder. Complementary and supplementary information provided in the appendix is suitable for conversion to transparencies for overhead projection.

The excerpts that follow include: the foreword; the first paragraphs from a section on how to use the Guide; and the opening paragraph from the Guide.)

Foreword

by Phil C. Lange

By 1963 over 500 classroom teachers had direct operational experience with the production of closed-circuit television, using this Television Production Guide as their entering vehicle. This Guide has provided a barebones introduction to TV production in situations where in four hours of class time groups of teachers have successfully produced their own TV programs. The issues, policies, ethics, practices and utilization of educational television are not a part of this Guide; the Television Production Guide limits itself to a single purpose--to provide an efficient way to help novices try out the different roles in a television production, and to do this with success.

This all started in 1960 when a group of experienced and prospective teachers were surveying their own problems in teaching. In a graduate education course entitled Problems of Teaching the members found that it was easy to identify problems but not easy to do much about them. One problem that had a high priority for these teachers was the difficulty of keeping abreast of modern instructional techniques. Specifically most everyone of these educators felt that a teacher should have more first-hand experience with television; but not one would take the step to enroll in a television production course. One wrote, "I want to start out with a small taste of TV, but not a year's diet!" They agreed their main purpose was to improve their utilization of TV by having more understanding of its production.

One member said succinctly, "If only there were Instant TV...!" Instant TV: it was one that term that the group caught fire. At this point, Sanford Levene, Audio-Visual Director of the Bronxville (N.Y.) Public Schools, a man thoroughly familiar with facilities of the closed-circuit television system at Teachers College, Columbia University, was brought into the picture. Mr. Levene, a meticulous organizer of instruction, was asked to meet with a sub-committee to design two two-hour sessions in the television studio to include explanation, actual planning, practice and finished production. It was assumed that the participants had no prior experience with TV production and that Mr. Levene would be the only knowledgeable technician at hand. Time would be at a premium.

This first successful session with Instant TV and subsequent uses have proven the effectiveness of the Guide. In thirty minutes most groups have been ready to move into the making of decisions about programs, scripts, and assignments to jobs as script writer, performer, cameraman, director, etc. Some groups take longer; and when time is not so precious a more deliberate approach may be used. Other instructors have used the Guide successfully in a variety of time schedules, large and small groups, and in different studio settings.

The Guide is not intended to be any panacea for developing near perfect skills overnight; rather it is a welcome mat that invites one to step in to see for himself.

In practice the production sessions have been followed by attention to the educational uses of TV, and instructional materials generally. The outcome should be a better feeling for TV and its potentials, and a better understanding of instructional technologies.

Television Production Guide - Sanford M. Levene

HOW TO USE THIS GUIDE

The Purpose

The purpose of this Guide is to help familiarize students with basic knowledge and procedures which will enable them to plan, produce and participate in simple programing for communicating via television.

Its contents in no way attempts to emulate large scale standardized educational and commercial television production methods and procedures. Instead, its format is designed to give lay students, in a brief period of time, a foundation for understanding and appreciating the advantages and disadvantages of utilizing television as a medium of communication in a school's curriculum.

This television production Guide has been used successfully by hundreds of teachers enrolled in graduate classes with course content having no direct connection with the study of educational television.

The Outcomes

The learning experiences derived from this type of activity are beneficial to students as well as the instructor

For students. Without formal, extensive lecturing or reading, students quickly gain a frame of reference for understanding what is involved in utilizing the television medium in education. Students actually learn from each other. Improvement both before and behind the camera is apparent for each succeeding production.

The TV telecast in this context is a team effort, somewhat analogous to team teaching. There are learnings about team relationships in group instruction that have application far beyond television productions.

For the instructor. The instructor has a chance to observe his students working together, pooling their abilities in a cooperative venture. In short this provides him with a classroom performance situation other than the typical paper-pencil and recitation format; he has a unique picture of his students caught in the by-play of group dynamics.

The degree of success in using this guide for the purpose for which it is intended will depend largely on the instructor's ability to feel confident that his students can successfully learn to manipulate the equipment and direct themselves for the purpose of producing a series of simple television productions.

Suggested Procedures for Using this Guide

(Note: This section proceeds with specific suggestions for a first session and a second session, including assignments to production and talent roles.)

TELEVISION PRODUCTION GUIDE

You should read this Television Production Guide in sequence from A to G, even though in your class session your instructor may have asked another sequence in calling attention to its various elements. Thus this is a sample "talk-through of the logical considerations you need in preparing for your part in your Television Production. This guide is organized around seven questions, two figures, and a sample TV script:

A. What are the basic educational television formats?

B. How do you plan an educational telecast?

C. What are the terms I will need to know and use to write a script-run?

D. What does a script-run look like?

E. In order to produce a telecast from a script-run, how many members are there in a production crew and what are their individual responsibilities?

F. What are the terms used by the director to communicate his wishes to various members of his crew?

G. What special things to remember when preparing your script run?

After your first reading you should then return to give special attention to those sections which refer to the role of functions for which you are responsible in your TV production.

(Note: Guide proceeds to answer these questions. The appendix contains figures depicting location of the basic facilities and typical production crew in an educational telecast.)

2500 MC CLOSED-CIRCUIT TELEVISION AT PLAINEDGE

Dalton Levy, Plainedge Public Schools

In order to better understand the development of ETV at Plainedge, it is necessary that I go back several years when we inaugurated our ETV project.

At that time we had the studio and two camera chains. We were fortunate to obtain a research grant from the New York State Education Department with which we evaluated the effectiveness of enrichment programs to the High School. After two years of research, during which time our television equipment was overhauled, we finally felt we were utilizing our equipment to its utmost.

Before reaching this stage however, we had many consultations with the teachers involved in the project. They are the ones who directly influenced the programs and the growth of ETV at Plainedge. At one time during the project we had a industrial psychologist interview all the teachers. The results of these interviews were applied to our television project. Of particular importance in these interviews were the programing and the television equipment.

Unfortunately when we first endeavored to use ETV we were rushed for time. This did not give us an opportunity to arrange teacher schedules and programs to exactly fit the curriculum. Since then we developed the following procedure. The first step in organizing our programs was for the district curriculum committee, under the direction of Dr. Rita Fass, who is Director of Elementary Education, to recommend to the Superintendent of Schools, Dr. John H. Rinehart, the subjects they felt would be most valuable. I would like to point out that Superintendent Rinehart and Assistant Superintendent Bretton are extremely well informed on ETV and have advocated its use for many years. They are both well acquainted with the medium.

After the subjects are selected the teaching staff is notified. In the High School the volunteer television teacher is given two periods daily to prepare his weekly forty minute program. In addition to this he has four classes and no duties. Even with this allocation there is seldom enough time. The television teachers are continually spending double that amount in preparation and organization. It is no easy job, as it also entails extra work even for the teachers receiving the programs. The elementary subject teachers are auditioned and selected for their ability before the camera. The best classroom teacher is not always the best television teacher.

Once the teachers are selected meetings are held with grade chairmen and departments to ascertain the subject matter. From this point on, everyone must work as a team. The teacher in the classroom is just as important as the one before the camera. The classroom teacher must be informed as to subject matter and must acquaint the class with the program. He should have a positive attitude, but this need not be so. Regardless of this, an outstanding factor will be that the better the classroom teacher, the more effectively and anxious he is to utilize and cooperate with this new teaching method.

There were many hardships with our equipment. Initially our equipment was very basic for the only reason that six years ago very little was available at school level budgets. However as we progressed we improved our equipment. The first step was to include intercarrier sound with the video. We also provided for an intercommunication network in the studio, a new console, switcher and complete overhaul of the equipment. Monitors were added to the cameras so the student operators could see their shots. Regardless of this change, the teachers were still not satisfied with the technical results. Video signal was bad, there were no common sync pulse, we could not superimpose or fade our cameras. A film chain, slide projector and multiplexer were not available, nor was any method of preserving the programs for a later date.

These problems occurred simultaneously with the installation of the 2KMC microwave system. The same comments on these problems were submitted by the elementary teachers. Even though the Adler microwave system worked to perfection, the origination equipment was causing poor results.

For over one year we exerted every effort to successfully overcome this technical problem, but the only way we could do it was in replacement of all studio equipment. The only error we felt we made on the 2MKC installation was installing the connectors on the roofs of the buildings instead of inside the building. Vandalism and their inaccessibility delayed several programs. The units will be moved inside when our system is connected to the newly FCC approved 2.5 KMC frequency.

New studio equipment was installed in September 1963. It included two camera chains, a complete film chain, waveform monitors, switcher-fader, videotape and a special program switcher designed by Sarkes-Tarzian to permit full flexibility in programing. By push button control we can program any combination of film chain, videotape or studio to either the High School closed circuit system, the microwave transmitter or the videotape recorder. For utilization, this switcher is more than worth the additional cost and it eliminates the old patch cord jumpers which are always misplaced or out of order.

With the new origination equipment and program techniques, all the television we now present is technically excellent. A direct evaluation of each program has indicated only minor difficulties in program content. The 2KMC system has been proved as an effective way to connect schools in our district. There havebeen no bad affects due to rain, snow, fog, sun or heat. Birds have no affect on the antennae. We have critically evaluated our television project from the beginning and feel we now have the proper foundation for full scale growth.

TAPES AND KINESCOPES FOR SCHOOL AND STATION USE

Robert Spinks, State Education Department

The State Education Department operates an Educational Media Distribution System. This system distributes mostly video tapes of educational television programs throughout the State, free of charge, to those who have the facilities to play back the tapes.

At present, we acquire the tapes by contract from the ETV Councils located in the State. Most of the holdings are of the in-school instructional type. We do have, however, a number of adult-cultural programs available. It will be possible soon for a TV system, operating with the Ampex portable recorder, to supply new tapes or use the present tapes in the library.

The major users of the tapes are the Councils themselves. In other words, the Councils produce programs, financed by the State, which are used by the Councils free of charge. As I have already mentioned, it will be possible for people with small portable VTR's to also take advantage of the library services. We will, in this case, make dubbings from the professional model machine to the slant track machines. It is also possible for ETV organizations out of State to use the tapes. There will have to be a slight charge made for dubbing for out-of-State users.

In order to get more information about the materials now found in the library, write to Carl Balson, Division of Educational Communications, New York State Education Department, Albany, New York. We have a summary sheet giving titles, grade level, number of programs available, and length of these programs which are readily available. We are also preparing a catalog giving more detail on each single program or series.

ELECTRONIC CLASSROOMS

LANGUAGE LABORATORY AND SPECIFICATION WRITING

David M. Crossman, State Education Department

One of the most complex and certainly one of the most frustrating tasks that a communication specialist is called upon to do is to select a language laboratory for his school.

A new lab must be inexpensive enough to satisfy the Board, serviceable enough to satisfy the business manager, easy enough to use to satisfy the faculty and prestigous enough for everybody. Oh yes, it must also be of value in the teaching of foreign languages to students who wish to learn them.

In 1959, this was a fairly easy task. There were only two manufacturers in the business and it was either one or the other. It didn't make much difference which one you chose - they were both equally reliable. The selection of either one virtually guaranteed service problems beyond your wildest dreams.

Now, of course, all that has changed.

During this past summer, the U. S. Office of Education published the most helpful and detailed work yet available on language laboratory selection. This is the publication entitled: "Language Laboratory Facilities: Technical Guide for the Selection Purchase, Use and Maintenance," by Alfred S. Hayes. Mr. Hayes supplies an intelligent rationale for the use of the language laboratory and includes what we believe are the best overall specifications now available.

Because these new minimum standards represent a substantial upgrading of this type of specification writing, it seemed to us that an increase in price might reasonably be expected from those manufacturers subscribing to the new specs.

Three months ago, we circulated a questionnaire to 44 manufacturers of language laboratory components and requested information and reaction relative to the new specifications. Specifically, we requested an estimate from each manufacturer on the anticipated change in price of their present components as contrasted with pricing information on equipment they might manufacture to meet the Hayes' specs. With a rather spectacular display of inventiveness and "creative questionnaire responsemanship" the replies began to arrive. A total of 30% were returned expressing attitudes ranging all the way from enthusiastic approval and adoption of the Hayes' specifications to a categorical gainsaying of the value of his efforts.

In general, respondents indicated a knowledge and approval of Hayes' work and indicated that they either were or would be meeting his criteria, at least from the standpoint of electronic minimums. His non-electronic specifications were widely criticized from a variety of viewpoints.

Chief among these complaints is the specification of metal furniture for both console and student positions. In our opinion, this detail not only severely curtails competitive bidding, but also makes unavailable to the bidder many excellently designed and highly serviceable wooden units. Another complaint which we feel justifiable is Hayes' requirement that all individual student program switches be organized geographically on the console to conform to the layout of the lab. This feature, though convenient, also limits bidding to non-modular types of construction making additions to existing equipment more costly than necessary.

The Hayes' specifications, unless modified, do eliminate cartridge type equipment for reasons which Mr. Hayes describes in his book. In our opinion, many cartridge type labs have undergone considerable improvement and should not be ruled out as a possibility.

The analysis of cost figures was particularly interesting. Of the 13 responding corporations, 61% indicated that they are now meeting the Hayes' specs. In at least two cases, however, the equipment which does meet the criteria is based on a deluxe line of components.

38% indicated that they plan no change in prices. 23% report an average of 46% increase in price. Interestingly enough 15% report an average of 17% decrease in price structure.

Even the most rigid kind of specification writing does not insure that you will get what you asked for. Probably the most important single step in the bidding procedure is the action you take to insure that your specifications can be met. This is a problem of enormous proportions since the industry itself has not decided how important variables are to be controlled. For example: there are at least seven generally uncontrolled factors involved in the measurement of frequency response alone, (1) Line voltage, (2) Tape speed, (3) Type of tape, (4) Bias current, (5) Equalization, (6) Tape guidance, and (7) Recording level.

In spite of the variation which exists within even the best written specifications, there is a method of approximating the worth of any new installation which should be employed by every school installing language laboratory equipment. This, of course, is the retention of a disinterested electronics technician with the equipment to test adherence to your criteria. I cannot stress the economy of this precaution strongly enough. Testing of this kind should be made as soon as equipment is turned over to you for use. In this way, installation problems you might never know about can be brought to your attention and corrected before your bill is paid. It is, of course, unreasonable to expect any distributor to wait an unreasonable length of time for his money, but Alfred Hayes suggests, and we concur, that a 30 day trial period is a completely reasonable time for a thorough testing job.

The Hayes specifications are far from perfect. I have tried to suggest some of the shortcomings in these criteria as we see them. I do feel that for the first time, specifications are available which have been constructed and tailored to the specific needs of the teacher of modern foreign language. They are solidly based in the research of linguistics.

From our inquiries of the manufacturers, it also appears that they represent no significantly increased economic burden to you. I recommend them enthusiastically for your use.

REPORT ON A CLASSROOM RESPONDER

David M. Crossman, State Education Department

In the April issue of AVI, Jim Brown, Graduate Dean at San Jose State College, provided an extensive reference guide to student response systems. A year of classroom experimentation with one such system has recently been completed in a joint effort between the East Greenbush (N.Y.) Village School District and the Division of Educational Communications of the New York State Education Department.

Plans for the utilization of a student response system were developed during the Spring of 1962 by the faculty and administration of the East Greenbush Junior High School and by the staff of the Division of Educational Communications. It was decided that a thirty unit Teletest system manufactured by Corrigan Communications, Inc. would be used for the experiment.

The purpose of this pilot study was to develop methods of utilizing the student response system to improve the effectiveness and efficiency of classroom instruction and testing. Three main objectives were outlined:

1. To investigate the operation and maintenance of the response equipment.
2. To investigate techniques of utilizing the response system for instruction.
3. To investigate techniques of utilizing the response equipment for testing.

The equipment itself consisted of thirty-two separate pieces of equipment. A five button console was used at each student position. The teacher's control equipment consisted of a instructor's console and a modified IBM 010 card punch unit.

In addition, arrangements were made for the transmission of card punched data by Dataphone to the data processing center in the State Education Department in Albany. East Greenbush Junior High School was equipped with an IBM 1001 data transmission system for the transmission of punched card data.

Briefly then, the system was designed to work in the following way: 1. A question is conceived by the teacher with up to five alternative answers. She introduces the correct alternative into her control console. Then, after presenting the question and possible alternatives to her class, she asks the class to respond. 2. Students are advised to respond by pressing one of five lettered buttons on their consoles corresponding to what they believe is the correct lettered alternative to the question presented. 3. Upon responding, students who are correct view a green light on their consoles; those who are incorrect are presented with a red light. 4. Students who are incorrect and hence have been presented with a red light can depress the remaining buttons, one at a time, until the green light indicates the correct alternative. In any case, only the first response is recorded. 5. As soon as the student response has been completed, the teacher inserts an IBM card into the punch and all student responses are recorded on a single card. This constitutes the permanent record for each question. 6. In addition, a meter on the instructor's console measures the percentage of students answering a question correctly. This meter can be zeroed for any number of students up to the maximum student positions available. 7. Collecting all response cards for a particular day, class or week, the data from the cards are then transmitted by IBM 1001 and the Dataphone to the data processing center in the State Education Department in Albany. There, the incoming data are again reproduced on cards by an IBM 024 Key Punch. A printout is then run on an accounting machine and is sent back to the school for use in grading and curriculum revision.

It was recognized early in the planning for automatic response equipment that considerably more preparation would be necessary for each class to fully test the system. It seemed appropriate that the concepts of programed instruction be incorporated into the Teletest system. To further prepare the faculty, two teachers from the East Greenbush Junior High School, Miss Ruth Hurr and Miss Virginia Howe, attended a programed learning workshop at the University of Rochester during the summer of 1962.

In order that some degree of consistency be achieved in the evaluation of this system, it was finally decided that it should be placed in the charge of one teacher, Miss Ruth Hurr. Miss Hurr, a social studies and English teacher, was to use the equipment five periods per day, four days a week. The room was available to other teachers during the first two periods every day and all day Thursday.

The equipment arrived one week following the closing of school for the summer of 1962.

The beginning of the experimental period in September, marked the first in a series of frustrating experiences with the equipment which eventually resulted in the premature termination of the project in April of 1963.

The first such problem arose when the equipment was found to be without operating instructions. Inquiry to the company disclosed that instructions were unavailable. The faculty in East Greenbush was required to determine the proper operation of the equipment in the absence of instructions. The instructions were finally received in November. A second problem was that of loose wiring. Student units were connected together by cabling which looped from desk to desk and presented a hazard in the aisles.

During the first weeks of school, the equipment proved to be very unreliable. At the suggestion of the factory, it was returned to California. Two weeks later, it was returned, but still did not function to the satisfaction of the faculty. Finally, an engineer was sent to correct the mechanical problems and to fasten the cabling in a less hazardous way.

Thus, after this rather uncertain beginning, the equipment was placed in service. Rather early in its use, it was discovered that involuntary cheating was a problem. The buttons on the console units were open for all to view and the specific selection of one student was open for all to see. In fact, a casual glance about the room could scarcely avoid the responses of a number of students. With her characteristic ingenuity, Miss Hurr provided each position with an empty shoe box in which the student console was placed. This removed the cheating problem.

The Teletest equipment was first used in the administration of spelling tests, grammar tests and factual tests in literature. Because of the structure of the student response console, responses to questions were limited to multiple choice, true-false, yes-no and other types of dichotomous responses.

In January, Miss Hurr conducted a survey which indicated that approximately 98% of the students who had used the Teletest for three months liked it for the following reasons:

1. "I know the right answer immediately."
2. "It's fun."
3. "No writing is involved, and I don't like writing."
4. "I get better marks because I always have a choice of answers."
5. "I know my marks ahead of time, and if I fail, I have time to think up excuses for my mother."
6. "I study more because I know I can't change my mind."

The 2% who did not like to use the equipment complained chiefly that they did not like to wait until everyone had answered each question before going ahead.

The transmission of data to and from the State Education Department was limited in two ways: 1. Because of the low cost involved, the IBM 1001 data transmission system was used. This system provides for the transmission of only one card at a time. An automatic card sorter would have saved much time here. 2. Because the final printout of tabulated data had to be mailed or delivered to the school, sometimes as much as a week passed before the data was available to the teacher for analysis.

One of the most serious limitations of the entire system is its inability to provide complete information about a student response. The Teletest equipment records only whether a student was right or wring. It does not supply information relative to which incorrect distractor was selected. Therefore, it is impossible to conduct an item analysis on an examination. Another problem which was discovered early in the experiment, was the question of absence vs. incorrect answers. The equipment records no answer and an incorrect answer in exactly the same way. Therefore, it is necessary to have all students press a predetermined "correct" button at the beginning of the hour to establish an accurate record of attendance. Then incorrect responses must be checked against the attendance data to insure that an "incorrect" response is not simply an absent student.

One of the difficulties that the East Greenbush faculty encountered was that of adhering to the programed plan for a class lecture. Junior high school students are not accustomed to a completely structured lecture and junior high school teachers are not used to this mode of teaching. They experienced difficulty making full use of the system when a departure from the program was required. They quite naturally experienced difficulty developing multiple choice items on the spot. Also, they found that the use of the equipment limited their freedom of movement. A small remotely operated hand held teacher's console would have been helpful.

These problems, however, were in general, easily overcome. The main difficulty throughout the school year was one of equipment unreliability. The East Greenbush faculty reported numerous occasions in which a quiz in progress would be interrupted by an equipment malfunction. Miss Hurr reported that the equipment failure problem reached a point where all automatic responses were recorded by hand to maintain a check. Innumerable times, the paper and pencil record was at substantial variance with the card punch record. The problem of mechanical failure became so acute, that by the middle of April the experiment, which was to have lasted until June, was terminated.

It is apparent to the Education Department and to the experimenting school that whatever merits the Teletest might have, they are virtually impossible to evaluate with nearly continuous malfunctioning of equipment. During the eight months of the project, the Teletest system was used by teachers of industrial arts, English and social studies. Gradually, initial enthusiasm fell to indifference as the unreliability of the equipment became known among the faculty. This is the all-too-familiar fate of communications equipment which does not hold up under continuous use.

Our most important evaluation comes from Miss Hurr who made use of the equipment on a daily basis. She felt that when the experiment was working, the students did benefit from immediate reinforcement. She states that some students studied more because they knew there would be no opportunity to change their minds once they answered a question. However, other students apparently were content to gamble their choices against the system.

The use of the system did not save teacher time. Miss Hurr reports that the most time consuming element of the system is its dependency upon the slowest student. The alternative to this problem is a time limit which, of course, attaches a factor of speed to every question. In so doing, the system is less flexible than the conventional paper and pencil test with regard to individual differences. In a comparative situation established by Miss Hurr, a twenty item quiz required fifteen minutes to administer by Teletest. A similar test using pencil and paper required eight to twelve minutes. The Teletest quiz also required the teacher to stay at her position to feed a card into the key punch for each item and to manually advance the number of each item as the test progressed. The pencil and paper test, in contrast, was not only faster but permitted greater teacher movement.

Because the experiment was terminated early, a certain amount of comparison was possible. Although the data was not subjected to statistical analysis, an empirical examination of student grades in Miss Hurr's class, both during and after use of the Teletest system, does not reveal any noticeable mean difference. However, there did seem to be some evidence of increased individual responsibility for learning on the part of some students during the use of the Teletest equipment.

At the conclusion of the experiment, those students who had used the equipment on a daily basis under Miss Hurr were asked three questions. Here is a sample of their responses:

1. What did you find valuable about using the Teletest equipment?
   - a. "It was easier and faster to learn things."
   - b. "It was easier to find out if I was right or wrong."
   - c. "It was better than writing."
   - d. "I could find out the correst answer even if I had pushed the wrong one."
   - e. "I knew my marks right away."
   - f. "It was fun."
   - g. "It made me think about my answer."
2. What limitations or annoyances bothered you?
   - a. "The machines took too much space on the desks."
   - b. "They didn't work correctly."
   - c. "I could see other people's answers."
   - d. "I couldn't change my answer when I changed my mind."
   - e. "I often pushed the wrong button accidently."
   - f. "Wires were to easy to trip over."
   - g. "I need time to really think about answers."
   - h. "I didn't like waiting till everyone else had finished a question."

i. "We couldn't move the desks around."

j. "It was a temptation to play with the keys."

3. Students were asked to suggest improvements they thought would be helpful. With usual childlike frankness, they responded with various appropriate suggestions:

   a. "The units should be built into the desks."

   b. "I'd like them built so I could change my mind."

   c. "Place the wires under the floor."

   d. "Place the unit inside the desk top, then have a sliding panel to cover it when it isn't being used."

   e. "Maybe the wires could be even inside the legs of each desk."

   f. "The keys should be locked unless the teacher turned on the machine. Then the kids couldn't play with the buttons."

   g. "If the front plates screwed on they wouldn't come off so easily."

   h. "If the tops were transparent, kids could see how they worked. Then they wouldn't want to take them apart."

Our experience with this response system has led to the following conclusions:

1. Equipment reliability is the fundamental prerequisite upon which all other features of the system are necessarily dependent.

2. Student apprehension is quickly dissipated with regular use of the system.

3. Ample time for teacher programing must be provided in order to justify the use of the system.

4. The system should supply complete response data so that thorough item analysis is possible.

5. Tabulated readout of response data is helpful in preparing grades and in analyzing patterns of student response. However, to be most useful, readout data should be available to the teacher immediately after a response has been made.

6. Students know that they will be required to respond to every question put to a class. This has required more consistent preparation among students and in some has developed more responsible behavior patterns toward classroom learning.

7. It does not appear that this response system has any effect on students' grades when contrasted with more conventional modes of response. However, because of the frequent inoperability of the equipment, this conclusion may be subject to substantial error.

8. Student units should be so constructed as to prevent the observation of the response of one student by another.

9. Regardless of its other values, the response system appears to have considerable motivational value. Students are interested and enthusiastic about making correct responses and seem to retain this enthusiasm.

Both participating organizations in this experiment felt that the motivational, data gathering and diagnostic properties of the automatic response system make its use well worthwhile. However, the equipment reliability problem must be solved before we can answer these questions.

THE SYSTEMS APPROACH TO TEACHING

Richard D. Hubbard, State Education Department

Recently Sol Cornberg, the well-known designer of teaching-learning spaces, met a group of people within the State Department of Education. He explained and visualized the exciting concept of study carrels with random access information retrieved by a simple type of telephone dial system. A sophisticated installation could supply each student station with "live" or pre-recorded television, broadcast radio, intramural public address material, tape recordings, disc recordings, slides, motion pictures, filmstrips, and microscopic images. Any or all of this would originate on or off the school premices.

This system as described in the October issue of AUDIOVISUAL INSTRUCTION appears as the ultimate in individualized instruction via a "system."

The Commission of Definition and Terminology in the AVCR Supplement No 6 defined the systems approach as "an integrated, programed complex of instructional media, machinery, and personnel whose components are structured as a single unit with a schedule of time and sequential phasing. Its purpose is to insure that the components of the organic whole will be available with the proper characteristics at the proper time to contribute to the total system, and in so doing to fulfill the goals which have been established."

Related to the subject or systems approach, telemation (now called Multimedia Instructional Laboratory, MIL) was described as "a complex of devices combined into one rather intricate instrument which includes a wall-sized panel of three or more translucent screens, a tape recorder, movie projector, three transparency projectors, and one opaque projector--all situated behind the screen--plus an instructor's lectern and a pushbutton control panel to operate the equipment. It can be programed on a punched tape for automatic presentation." This appropriately describes the MIL system at the University of Wisconsin except for the addition of a television projector, a record player and four teleprompters.

For the remainder of my presentation I would like to discuss the MIL physical facilities, what research disclosed about using the lab, and some pointers on programing for a system of instruction.

Physical Facilities

The Multimedia Instructional Laboratory of the University of Wisconsin was established in February, 1961 for the purpose of:

1. Improving the quality of large group instruction at the university level through the use of an automated system of audiovisual equipment.

2. Providing an instructional laboratory in which the effect of multiple-screen, rear projection techniques on learning could be studied.

3. Developing production procedures, standards and terms.

To date the primary functions of the MIL have been:

1. Producing automated lectures for several subject matter areas for use in regularly scheduled university classes;
2. Conducting research projects related to variations in material and lecture production, variations in the learning situation, effects of unique or cross-media utilization, analysis of student attitudes toward the system, and variations in learning acquisition and retention;
3. Making basic improvements in the mechanics of the MIL system; and
4. Demonstrating and reporting of the multimedia instructional medium, both locally and nationally.

Although most of you are acquainted with the physical arrangements as described in my article in the November 1961 issue of AVI, the following visuals will review the set-up:

1. Class viewing lesson on the tri-parte screen
2. Overall view of the backstage area
3. Overall control panel
4. 16mm B+H Jan model motion picture projector
5. Tele Pro 6000 for 3¼" x 4" slides
6. GPL TV projector
7. Du Kane 2" x 2" slide and filmstrip projector (2)
8. Beseler 10" x 10" opaque projector
9. 7 1/2 + 3 3/4 ips stereo tape recorder
10. Bogen stereo 3-speed record player
11. Teleprompter in Speech-Vu
12. Special Underwood typewriter
13. Hand control for prompter
14. Overall lectern
15. Sequence selector
16. Telemation unit
17. Control panel at lectern (control method #1)
18. Telemation button at lectern (control method #2)
19. Cued prompter (control method #3)
20. Cued tape (control method #4)

Productions have been done in several subject matter areas including Art Survey, Comparative Education, Curriculum and Instruction, Health Education, and Russian History. Two areas - Audiovisual Instruction and Human Abilities and Learning - have complete semester courses presented automatically.

Each completed presentation represents approximately 120 man hours, excluding the major professor's time, and involves a production team which includes a director, production director, programer, artist, photographer, stenographer, lab technician, major professor and his assistant.

Research Activities

Research activities centering around the Multimedia Laboratory, both completed and projected for the future, have been of several kinds:

1. Analysis of student attitudes toward and reactions to automated lectures.

   These analyses have been carried out primarily in connection with courses in Russian history and health education. Results indicate: (a) a strong student preference for programed lectures over regular lectures; (b) that students feel programed lectures present information more rapidly, in more detail, and in a manner which is condusive to improved recall; (c) programed lectures result in the formation of clearer concepts; (d) studentsindicated that they believed these presentations were better organized than regular lectures; (e) students also felt that visuals as used were appropriately related to each other, were clear and easy to understand, were used in appropriate numbers, and changed at proper intervals; (f) that visuals were well chosen, clearly visible, well-timed and in proper sequence. The continual analysis of programed and automated lectures on the basis of organization, content, visuals, and over-all student impression has resulted and will continue to result in many revisions and improvements of productions.

2. Comparison of multimedia versus regular instruction in the field of educational psychology.

   This initial short-period study indicated that the same group of students gained substantially more from multimedia instruction than from regular lectures, and that automated materials were retained to a greater degree. Additional follow-up studies carried out over longer periods of time are needed for more conclusive evidence and are planned as part of the future research activities.

   In a six week study by Snowden the student indicated they were generally well satisfied with the automated-programed lectures but did show a preference for a "live" presentation by the professor as versed to the same material presented by tape "play back".

3. Study the contributions to learning made by a prepared study outline and/or note taking in a multimedia facility.

   The McNamara study indicates that a prepared study outline is very beneficial in improving the understanding of materials presented via automation. Note taking is an important factor to consider; if it is a course requirement the presentation pace must be slowed accordingly for effective learning to take place.

4. Investigate the use of supplementary visuals with a kinescope.

   Using a kinescope on "chalkboards" (one of a series of 42 audio-visual lessons prepared by Dr. Walter Wittich for a recent study), Lubitz prepared side visuals to supplement the main screen presentation. Four groups were selected from the College of Education and were exposed to differing treatments of the material. Group 1 saw just the kine, group 2 saw all the visuals, Group 3 saw visuals supporting the first half of the presentation, and Group 4 saw visuals supporting the last half of the presentation. A pre and post test was given to all groups and the ratio of the difference in errors in student response on the two tests was determined. The results were:

Group 1	2% less errors pre to post test
Group 2	35% less errors pre to post test
Group 3	16% less errors pre to post test
Group 4	22% less errors pre to post test

5. Study of the characteristics of the laboratory installation to compile equipment standards for use in planning improvements of the present installation and in establishing new installations.

   Time is being devoted to ways and means of improving automation as well as the study of characteristics of screens and equipment used for rear projection. This is part of a continuous search for creating learning conditions as near to the desired ideal as possible for the viewer.

A number of research problems centering around multimedia instruction have been identified and defined in a continuous effort to improve the quality of instruction in large groups at the university level.

1. Determining the optimum verbal-visual load for the learner under automated instruction conditions.

2. Determining the effect of differing learning sets on acquisition and retention of learning in multimedia lessons.

3. Determining conditions under which multiple visuals on the tri-part screen are most effective.

4. Setting up comparative studies on different methods of employing the laboratory equipment and their effect on student learning efficiency.

5. Studying the relationship of visual color and size with acquisition and retention of knowledge.

6. Investigating the use of learner response stations in the multi-media laboratory in addition to existing equipment as a type of programed teaching machine.

7. Studying the effect on acquisition and retention of learning in a two-semester art education course where the assigned professor is absent from the campus for the entire year and where the same basic student population is maintained. In both semesters the automated programed material will be accompanied by a tape recorder audio portion. A "stand-in" instructor will be present during the first semester lectures for "follow-up" discussion purposes. No instructor and no discussion session will accompany any of the second semester presentations.

Pointers on Programing

In conclusion here are some reminders for programing of the type involved in the MIL project:

1. Programing is a team effort--each one involved needs to know the objectives and his part in achieving them.
2. The lecturer is the subject matter controller, you are the visualizer.
3. Know the physical limitations of your system and plan sequences, materials, etc. accordingly.
4. Relate the images one to another--contrast, color, meaning, length, etc.
5. Keep sequence and continuity high to contribute to organization.
6. Be aware of pacing.
7. Use secondary images to supplement, reinforce, accent, punctuate, explain, etc. the primary ones.
8. Consider all the types of visuals - art work, copy work, opaque, overhead, 16mm film, TV, recordings, music, etc.
9. Catalog and file completed visuals--dual use may be possible in developing other concepts in other lessons.
10. Use visuals only when clarifying not for the sake of visualizing.
11. Preview (during program development and the finished lesson) is an absolute must.
12. Build in some kind of overt response.
13. Be ready for revision in terms of new material and student responses.

14. Evaluate each program in terms of effectiveness, purpose and efficiency.

The MIL system at the University of Wisconsin is only one of the many projects carried on in the area of systems. Several are including individual response stations and computers. This offers some exciting possibilities. Still much remains to be done on this topic:

1. Research to find what systems can do,
2. Application at all levels and all areas to determine how best to use them, and
3. General acceptance on the part of administrators, teachers and the public as to the worthwhileness of this technique.

Remember the technology for attaining systems teaching is available to us now. How will we use it?

FOREIGN LANGUAGE LABORATORIES IN SECONDARY SCHOOLS

Sarah Lorge, New York City Board of Education

The use of language laboratories has for several decades been an accepted aspect of language instruction at the college and graduate school levels. In recent years, financed largely by the National Defense Education Act, many cities have introduced laboratory equipment and procedures into language instruction at the secondary school level. In this connection, a number of questions and problems have presented themselves, leading to a need for clarification by appropriate research studies.

The Bureau of Audio-Visual Instruction undertook to investigate the use of language laboratories with the aid of a Research Grant from the State Education Department. The first research studies were designed to identify and measure differences in achievement in specified areas of language skills, as shown by groups which used, and comparable groups which did not use a language laboratory as part of the instructional program in high schools. This experiment was conducted in two schools.

As a result of this study, several important questions were raised, requiring more detailed investigation into how laboratory equipment is most advantageously used, as well as the effect of various time patterns of utilization of the equipment. This second study was conducted in ten high schools; the experimental population consisted of 17 classes. The two studies are reported separately here. The studies were conducted between 1959 and 1963.

The entire research program conducted by BAVI had the advantage, in addition to the New York State Research Grant, of the interest and assistance of the Acting Associate Superintendent in charge of Research. The Bureau of Curriculum Research also cooperated in valuable ways, notably in publishing the Curriculum Report "Using Language Laboratory Techniques in Foreign Language Classes," which was distributed to teachers of foreign languages at the beginning of the research study.

The First Study: A Comparison of Results in the Teaching of French in High School Achieved with and without the Use of the Language Laboratory

Areas of Investigation

It was proposed to test the extent to which the regular use of the language laboratory would lead to measurable improvement in competence in speaking French, and in comprehension of spoken French without significant loss in reading comprehension and in written aspects of language study.

The Experimental Population

High school entrants were divided into comparable experimental and control groups, on the basis of the Stanford Reading Test score, and the Gallup-Thorndike Vocabulary Test, in lieu of intelligence test scores. No significant differences between the mean scores of the experimental and control groups were evident.

The period of experimentation began in September 1960, after a pilot period of preparation in the two schools expecting the first installations. By June 1962, experimental and control groups of first, second, and third year students of French had been studied.

The Program of Instruction and Activities

The experimental factor was the use of the language laboratory for sixty minutes a week taken from the regular five periods a week of class instruction and devoted to activities designed to develop listening and speaking skills.

Changes in Method and Content

Language laboratory teaching and learning require that the ear be trained as a vehicle of learning, instead of, or in addition to, the eye. Students heard materials presented at slow, medium, and rapid pace. They heard easy, intermediate, and difficult materials, simultaneously "sent" to individuals according to their competence in listening. They heard a variety of voices, not only their own teacher's; and they heard authentic native speech patterns.

The preparation of tapes became a major activity of the project staff.

In all, more than 400 different lesson-tapes were produced for the experiment.

Laboratory Activities

The teacher presented the "live" lesson, selected the appropriate tapes according to listening competence of the pupils; "monitored" the students, occasionally interrupted the tape, taught an item which needed correction and had pupils resume the taped lesson. Some lessons were for listening and speaking only, some listening and speaking lessons were accompanied by visual reenforcement, some were associated with writing.

Teachers were asked to use all the activities which the laboratory permitted, but the time for each activity was not prescribed.

To meet the sixty-minute-weekly requirement set by the experimental design, most teachers found the most comfortable pattern to be thirty minutes two days a week.

Testing

Speech was tested by a sight-reading passage and by questions whose content did not present factual difficulty.

The test was administered individually, and student responses were taped and identified by a code number and letter. Responses were re-recorded in random order, so judges had no way of knowing when or by whom a response had been made. This process of re-recording was familiarly termed "scrambling."

Judges gave an overall estimate of speaking ability based on a five-point scale. Also rated were fluency, pronunciation, and intonation in sight-reading; appropriateness, grammatical correctness, and fluency in response to questions.

Comprehension of spoken French was measured when spoken rapidly and then at a more deliberate pace.

Administered as a group test, the Listening-Picture-Directions Test required placing a number on a part of the picture as directed by tape. Different pictures and sets of descriptive statements were prepared for elementary and intermediate levels.

The scores represent the number of correct responses out of a possible maximum of fifteen at the elementary level and twenty at the intermediate level.

Traditional skills were tested by the administration of a standardized French pencil-and-paper test.

The Findings

Statistical Method Used: Comparisons were made by computing t-ratios and levels of significance between the means of the groups.

Students' Speaking Skills

The ninth year population beginning French showed a significant difference favoring the laboratory group at the .01 level of significance in fluency, at the end of the year.

The tenth year population (second year French) showed a significant difference at the .01 level of significance in fluency and intonation, at the end of the year.

The eleventh year population (third year French) failed to reveal significant differences between groups in any speaking skill.

Comprehension of Speech

The third-year French group took the Listening-Picture-Directions Test in January 1961, and in June 1961. In January, differences between lab and non-lab classes were not significant at either rate of speed. In June 1961, differences favoring the lab group were significant at the .01 level of significance* at both rapid and slow administrations.

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*t-ratio at .01 level of significance indicates that the differences between groups have only a 1% possibility of occurring by chance. The difference is therefore accepted as statistically significant. A .05 level of significance indicates a 5% possibility that the results might have occurred by chance. This difference is also considered statistically significant. A level of significance higher than .05 indicates that there is a possibility greater than 5% that the results might have occurred by chance, and is not considered statistically significant.

The following year the second-year-French experimental group was given the elementary form of the Listening-Picture-Direction Test at the midyear and the intermediate form at the end of the year. At neither midyear nor end of year were differences between groups statistically significant.

In the first year French group, the statistical difference does not appear in the June testing at either rate of speed. Only the third year French group showed significant results in comprehension at both rates of speed, at the year's end.

Effects on Traditional Skills

The standardized Cooperative French Test was administered to all groups at beginning of year, midyear, and end of year (except at the beginners' group, took the test at the end of the year only). There were no significant differences in any part or at any level.

Table showing means, standard deviations, t-ratios, and levels of significance in Listening-Pictures-Directions Test administered to Third Year Experimental (N=59) and Control (N=37) population in January, 1961, and June, 1961, Sheepshead Bay High School.

January 1961

Variable	Control		Experimental		t	p
	Mean	S.D.	Mean	S.D.		
Rapid	11.35	3.06	12.31	2.89	1.519	N.S.
Slow	15.43	2.67	16.10	1.96	1.348	N.S.

June 1961

Variable	Control		Experimental		t	p
	Mean	S.D.	Mean	S.D.		
Rapid	14.70	2.61	16.73	2.40	3.82	.01
Slow	17.27	1.68	18.27	1.74	2.81	.01

Implications of the Findings

The ninth year group worked with a completely audio-lingual method using commercially-prepared audio-lingual materials in experimental and control groups. A principal objective of the audio-lingual method is the development of fluency. Yet with all classes using the same materials the laboratory students developed the skill to a significantly greater degree. It is possible that the teacher who tries to provide an adequate amount of model speech to develop good imitative speech habits, may find it difficult to continue during an entire teaching day, and then through successive days. Through sheer lack of strength the teacher may be forced to slow down his "live" speech production, whereas the tape, usable ad libitum, can furnish more, and more sustained, and more continuous practice in model speech.

In the 10th year group (2" year French), the same teacher taught all four classes, two lab and two non-lab, thus eliminating the teacher variable. Since at all other times the laboratory and control groups were exposed to the same teacher's speech pattern and teaching methods, significant differences in fluency and intonation may be attributed to the laboratory experience.

It is of interest to consider why the eleventh year group (third year French) revealed no significant differences between experimental and control groups in any measure of speech. It is possible that students had already developed fixed pronunciation habits in the two years prior to their entrance into the laboratory in 1961. Speech habits are hard to change. The significant differences which favor the eleventh year lab group in comprehension may indicate that comprehension is a more mature skill in which the longer span of time of language study as well as the additional year or two in age play a part in the superiority of comprehension, while precisely these factors impede the change of already-fixed speech patterns in French.

The results obtained in the standardized French Test with sixty minutes a week less of traditional instruction than the control groups, the laboratory groups performed as well in traditional skills. This finding is of particular importance to teachers and administrators who may have feared unfavorable results on traditionally-accepted phases of language learning.

Limitations of the Experiment

An experiment conducted in a school is always subject to limitations. The environment is less controllable than the experimenter would like. While the experiment is going on, so is the rest of the school, whose administrative staff has many other concerns besides the experiment. Students' absences, school holidays, lengthened assembly periods, are among the unavoidable conditions.

Other limiting factors were due to the newness of language laboratories in New York City schools, delays in installation of equipment and the need to train teachers.

Conclusions

In summary, this study has demonstrated and identified several specific benefits which accrue to laboratory students as a result of sixty minutes a week of language laboratory practice. It is possible that differences which favor lab groups over non-lab groups may be related to the level of instruction and the maturity of the learners.

Ninth year lab pupils beginning French develop a degree of fluency in speech significantly greater than non-lab groups, both groups using a strictly audio-lingual method.

Tenth year groups studying second year French develop, with the use of the lab, significant superiority in fluency and intonation.

Eleventh year lab groups show no greater improvement in speech characteristics, but develop significantly greater ability to understand French when spoken at both rapid and slow rates of speech.

Gains which were made by laboratory groups in speech and listening skills were achieved without loss in traditional skills as measured by a standardized French test.

A possible effect of the laboratory on motivation to continue language study may be the reason why so great a proportion of lab students reaching the terminal third year elected the optional fourth year of French.

In June 1961 of the experimental group of 59 in third year French in Sheepshead Bay High School 30, or approximately 50%, elected fourth year French, while of the 37 non-laboratory students in the control group, 8, or 27.7% elected to continue French.

In June 1962, of 51 laboratory students completing third year French, 25, or 49% elected the optional fourth year, while of the remaining 184 students enrolled in third year French, 47, or 20.1% elected to continue.

In June 1962, in Abraham Lincoln High School, there were 141 third-year lab students (not all in the experiment) of whom 104, or 74%, continued into fourth year French. Of the remaining 163 non-lab students in the same grade, 74, or 45%, elected to continue.

While it cannot be conclusively proved that the laboratory was the motivating factor, it is of interest to note that in both experimental schools a much higher percentage of students who had had laboratory work continued to study French beyond the high school graduation or college entrance requirement.

Indications for Future Study

Further clarification was needed as to the relationships of specific patterns of utilization to the kinds of learning gains which emerge from language laboratory procedures.

The Second Study: The Relative Effectiveness of Four Types of Language Laboratory Experience

The object of this study was to determine the relative effects of two kinds of lab equipment, each used in each of two time patterns, in comparison with one another and with a control group using no electronic devices, in learning French in secondary schools.

Kinds of Equipment

1. recording-playback
2. non-recording (audio-active)

Time Patterns

1. 20 minutes daily
2. one period a week

Population

Ten schools were involved in the experiment, of which three participated only as controls. The experimental and control population consisted of unselected average pupils with one year of credit in French, now assigned to second-year French.

Design of the Experiment

Group 1: 4 classes used recording-play-back equipment for 20 minutes daily.

Group 2: 4 classes used non-recording (audio-active) equipment for 20 minutes daily.

Group 3: 5 classes used recording-play-back equipment once a week in the 10 recording stations per class.

Group 4: The same 5 classes as in group 3 used non-recording (audio-active) equipment once a week in the 20 non-recording stations per class.

Group 5: 4 classes served as controls, using no electronic equipment.

Laboratory time was included in the regular 5 class periods a week in French.

Description of equipment:
Record-Playback

The student's equipment in record-playback includes tape recorder.

Audio-Active

Student has only headphone and microphone.

Characteristics of Types of Equipment
Record-Playback
Advantages

Students enjoy hearing their own voices, therefore listen with more attention. Recording permits subsequent analysis of speech for corrective purposes.

Disadvantage

Playback takes time away from speaking activity while student only listens.

Audio-Active (Non-Recording)
Advantage

All lab time is spent in active practice.

Disadvantage

Self-criticism or teacher's evaluation of speech must be made instantly as the student speaks. Single activity of listening-responding without playback gets monotonous.

Testing

The following tests were administered:

Background Variables

The Gallup-Thorndike Vocabulary Test, Forms 3 and 5 combined (as described in the previous study).

The Guilford Test of Expressional Fluency.

The Pimsleur Questionnaire on Motivation toward Foreign Language Study.

Growth in Achievement:
(pre- and post-tests)

The testing program, similar to that of the previous experiment, included pre- and post-tests in speech, understanding, and traditional skills.

Method of Controlling for Judges' Reliability in Speech Tests

Judges rated 107 cases in common. The same conditions of anonymity prevailed as in the previous experiment: "scrambling" of tapes.

The Program of Instruction

Activities and Materials

Teachers in experimental classes were requested to follow the prescribed conditions closely in regard to equipment utilization and time pattern. From September 24, 1962 to May 24, 1963, they received weekly packages of tapes prepared by the project staff.

Tapes included many prepared for the previous experiment, modified specifically for the requirements of recording and non-recording laboratories. Additional tape series were prepared in pronunciation and intonation practice.

Findings

Initial Status of the Groups

The Gallup-Thorndike Vocabulary Test revealed no significant difference among the groups. The Guilford and Pimsleur Tests showed significant differences among the groups; however, the correlation of these background variables with achievement gains in all groups is extremely small. No effects in the experiment result from the background variables.

Analysis of relative gains in the various measures:

Speech

Pronunciation, intonation, and fluency were rated separately. While there are no significant differences among the five groups, they show a consistent pattern in the order of amount of gains. The two daily groups exceed the two once-a-week groups; they also exceed the gains in the control group. As between the two daily groups, recording-playback makes the greater gains.

Appropriateness, correctness, and fluency of reply, the two daily experimental groups and the control group revealed no significant difference among themselves; but achieved significantly greater gains than either once-a-week experimental group.

A separate rating of quality of speech (global rating) shows the Record-Playback-Daily group made significantly greater gains than all other groups.

Comprehension

Two ratings were given: for comprehension of rapidly-spoken French and more slowly-spoken repetition.

In comprehension of rapidly-spoken French, the Record-Playback-Daily group made gains significantly greater than the three other experimental groups, and also than the control group.

Pencil-and-paper skills of traditional learnings were judged by a standardized French Achievement Test.

In silent reading the control and daily recording groups gained significantly more than the other groups.

In vocabulary meaning, there were no significant differences among any of the groups.

In grammar, both daily groups and the control gained significantly more than either of the once a week groups at the .05 level of significance.

The total score shows that the daily recording group gained significantly more than the other groups at the .01 level, and the control groups, not statistically different from the daily recording group, gained more than the other experimental groups at the .05 level.

Inspection of the accompanying table indicating the order of gains reveals that the Record-Playback-Daily group stands first or second on thirteen of the fourteen variables measured. The Audio-Active-once-a-week group ranks fourth or fifth on thirteen of the fourteen variables measured. The control group stands between these two, ranking first or second on seven variables, and fourth or fifth (lowest or next-to-lowest) on five variables.

Statistical Method Used

Comparisons were made of mean gain scores achieved by each group in each variable studied, from pre- to post-testing.

All data were analyzed by an analysis of variance design, with the Scheffe formula used to determine specific non-chance differences.

RELATIVE ACHIEVEMENT GAINS OF FIVE GROUPS
IN FOURTEEN VARIABLES
JUNE 1963

VARIABLE	RPD	AAD	RPO	AAO	Control	Level of Significance
Pronunciation	1	2	3	4	5	N.S.
Intonation	1	2	3	4	5	N.S.
Fluency in Reading	1	2	3	5	4	N.S.
Imitation (Mimicry)	2	5	1	4	3	N.S.
Fluency, Answers	2	3	5	4	1	.05
Appropriateness of Answers	2	3	5	4	1	.01
Correctness of Answers	2	3	5	4	1	.01
Global Rating of Speech	1	2	4	3	5	.01
Coop I: Silent Reading	2	3	5	4	1	.01
Coop II: Vocabulary	2	5	1	4	3	N.S.
Coop III: Grammar	1	3	5	4	2	.05
Coop Total	1*	3	4	5	2**	.01* .05**
Listening--Fast	1	2	3	5	4	.01
Listening--Slow	5	1	3	4	2	.01

RPD: Recording-Playback Daily
AAD: Audio-Active Daily
RPO: Recording-Playback Once-a-week
AAO: Audio-Active Once-a-week

*RPD exceeds AAO at .01 level
**Control exceeds AAO at .05 level

Where level of significance is indicated, underlined groups show no significant differences among themselves. Significant differences occur between underlined groups and the others.

Where one group only is underlined, the significant difference occurs between that group and the other four.

In the table, 1 indicates greatest gains, 5 indicates smallest gains.

Implications of the Findings

The purpose of this study has been to compare the amount of gains in learnings achieved by using language laboratory equipment in each of several different ways in the teaching of second-year French.

Recording-playback utilization was compared with audio-active, and daily use was compared with once-a-week use. Each condition was used in each time pattern. Comparisons were also made with a group using no electronic equipment.

Pupils were tested in speech and listening comprehension, and in pencil-and-paper skills, to determine possible effects of the laboratory experience on other aspects of the learning of French.

Speech and listening comprehension are the two areas of new interest in foreign language learning, and the two areas to which laboratory work is directed.

Speech

In the global rating (overall quality) of speech, the Record-Playback-Daily group showed the greatest gain. This gain might be attributed to the greater amount of time spent in the laboratory. However, the Recording Playback Daily also exceeded the Audio-Active Daily group, indicating that the kind of equipment as well as the time spent in the lab made a difference in gains of speech.

It is possible that the superiority in global rating of speech shown by the record-playback group results from the close attention given to the playback. The interest in hearing one's own voice may lead to efforts which outweigh the greater amount of audio-active practice time, lacking the possibility of self-criticism, and not providing the satisfaction which pupils seem to derive from hearing the playback of their own voices.

All experimental groups gained more than the Control group in global rating of speech. This may be attributed to the fact that any type of laboratory removes the "audience" situation which necessarily obtains for all pupils except the one reciting in the open class. Whatever the kind of lab practice, all pupils are actively engaged in it all the time, thus increasing their contact with the language in a way which is not possible when each pupil has to suspend activity while others recite.

Comprehension of Spoken French

The Recording-Playback Daily group achieved greater gains than any other in comprehension of rapidly-spoken French. Possibly the close attention required to compare model and imitation may have had a favorable effect on comprehension.

Traditional Skills

In silent reading, the daily recording and the control groups gained significantly more than the others.

In vocabulary there is no significant difference among groups.

In grammar, the two daily groups and the control group gained significantly more than the once-a-week groups.

Apparently the once-a-week groups failed to gain as much as the control group in traditional skills. From this, one may infer that unless a certain minimum amount of time is spent in laboratory work, significant gains cannot be expected.

Limitations

Certainly all problems in the use of the language laboratory have not been probed. For example, in the once-a-week condition, ten students used recording-playback equipment, and twenty used audio-active equipment in the same room at the same time.

Teachers may have had some difficulty in operating the two experimental groups simultaneously.

Also, there were days when the laboratories were inoperative because of equipment failure. For this reason, the once-a-week results should not be considered definitive.

Summary

The specific time variations affected results more than the specific equipment variations since both daily groups performed better than either once-a-week group.

As between groups using different types of equipment in the same time-pattern, record-playback appears usually to exceed the audio-active although not always to a significant degree.

In the daily time pattern record playback stands first or second in thirteen out of fourteen measures.

The control group equalled the performance of the daily laboratory groups without significant difference among them in three pencil-and-paper measures, and in three speech measures related to answering questions.

In no measure did the control group make gains significantly greater than all lab groups.

The Recording-Playback-Daily group achieved significantly greater gains in overall quality of speech in comparison with all other experimental groups and also with the control group.

The Recording-Playback-Daily group achieved significantly greater gains in understanding rapidly-spoken French in comparison with all other experimental groups and with the control groups.

Not all differences among groups were significant. Trends, however, were notable. An inspection of the table showing the comparative gains made by the five groups reveals that the recording-playback-daily group made striking gains; it ranks first or second in thirteen of the fourteen variables measured.

Further study is necessary in once-a-week utilization, in order to determine whether better results might be achieved in this limited time, possibly if two experimental groups did not work in the laboratory simultaneously, or if a teacher had developed greater ease in conducting two activities simultaneously.

In a previous study, certain gains were achieved by students using the laboratory sixty minutes a week. This may indicate the lowest time limit which will produce significant changes through lab work, i.e., twice a week.

It is apparent from the variation in results according to time patterns and equipment utilization that the mere installation of a language laboratory is no guarantee that improvement in linguistic skills will occur automatically.

Good results demand: equipment of good quality with potential for a variety of learning experiences; teachers skilled in handling equipment; materials prepared specifically with regard to the goals of the course and techniques of laboratory learning; and careful allotment of laboratory time.

INSTRUCTIONAL FILMS

8mm FILM PRODUCTION AT HAMBURG CENTRAL SCHOOL

Louis Brown, Hamburg

With thousands of films available and more being produced, why would a school system be concerned about producing its own films? We cannot compete with the large and well established commercial firms.

The answer is in the nature of the commercial film. It has to show a profit and in order to do so, it must meet the needs of schools on a nationwide basis. These films are good and are constantly improving in the areas that have a nationwide demand.

The local 8mm production is NOT intended to compete with the commercial film whether the commercial film size is 8mm, 16mm or 35mm. The local 8mm production has its strength in filling a local need that a commercial producer cannot afford to market at a price schools can afford.

What might be considered a local need?

At Hamburg, we found as have many districts that we had many people in our district who did not understand certain aspects of our educational program. One approach for developing this understanding, along with the newspaper releases and newsletter productions, was to attempt to show our people via the 8mm film what constituted these little understood areas. In this respect we were concerned about showing OUR people OUR program. This may or may not be of interest to other districts. Our chief concern was local.

We have made use of 8mm in the Hamburg District for special teaching areas. We will show you a film clip on the dissection of a frog. This film is designed to serve several functions that are different from the commercial versions. It depicts our own teacher in our situation with the emphasis on our teacher. This can be used in conjunction with a commercial version.

Why 8mm films?

The principle involved in using 8mm is consistent with the operation of our educational institutions - i.e., to do a very good job within a reasonable financial outlay.

We know (at least we are told) we could do a better job of educating our young people if we had a smaller teacher load (or teacher-student ratio); if we had more guidance people, more administrators, more secretaries, and more money. Similarly, we could do a better job of producing films if we used 16mm; better yet if 35mm were used and the commercial people might agree that 75mm is the best.

Among other factors involved, is the amount of financial outlay necessary. Thus we must try to balance the cost with quality. On a local basis, 8mm is comparatively inexpensive. The cost for a given running time is about half that of 16mm. The equipment (cameras, lights and projectors) necessary is usually available among the staff of the school or parent groups in the community. Many people, either teachers or parents, are familiar with 8mm cameras. Using the color film, Kodachrome II, the cost of four minutes of film and the developing is available for less than four dollars. To add a magnetic soundstrip, will cost from $1.50 to $3.00 (bulk lengths), thus a total of $5.50 to $7.00 for four minutes. Since we are more familiar with the ten minute film costs, a ten minute 8mm COLOR film with sound would cost approximately $30.00. It is doubtful that there are many school districts in New York State that could not afford this amount.

Ten minutes of 16mm color film costs $120.00. The difference in cost is basically in the costs of production to achieve a high standard of quality. Again we should keep in mind that our purpose is not to compete with commercial producers in subject areas filmed or do we expect with our limitations of means to achieve their expert quality. But just as commercial films have developed through the years to their present standards, we can expect locally produced 8mm films to develop reasonably good quality. Within limits, there is some value to the lack of polish in the local production in that a little crudeness serves to remain the viewer that it is a local production produced especially for their enlightenment. This flattery is carried further when people and places of their personal acquaintance are in the film.

The idea of single concept films and individual room libraries of 8mm clip has had only limited exploration.

The possibility of producing local 8mm film for telecasting is nearing a reality with the development of synchronising mechanisms. This would mean the 8mm film could be broadcast via the commercial or educational channels or within a closed circuit system.

With the great strides that have been made in the 8mm cameras, 8mm projectors both sound and slow motion, and the improved films available, we can expect 8mm to serve a most useful function in expanding audio-visual programs. The equipment is here. The imagination and productivity, however, depends upon people. It has been said that 8mm is already outdated by the innovation known as Telecan where magnetic tape will be used to record both the visual and the audio. With the limited investment involved with 8mm, what better means of preparing for these future devices than the 8mm film?

What purposes can the locally produced film serve?
The following areas are being served by 8mm at Hamburg:

A. Teaching students.
The dissection of the frog had as one purpose its use with Biology students. With limited lab space and time, the film can show every student the details involved. If there is provision for a lab, teachers can use this film to introduce this specific lab; or it can be used by individual students for make up or for review: by changing the sound track (or using a separate tape recorder), the same film can be adapted for science classes in the lower grades or different classes at the same level.

____ Film clip - Frog ____

B. Teaching teachers.
It should be pointed out that the various purposes referred to are not restrictive for any one given film. Like other district owned materials, a particular film may serve one purpose(or several) at one time and another purpose at another time.

The clip on tumbling has as one of its objectives the illustration of techniques involved in this activity for physical education teachers.

> This film is still being refined and has not as yet been striped for sound. The teacher depicted has narrated personally when using the film. This film has been used with a slow motion projector and by utilizing a reverse wind, single areas can be studied before advancing the film sequence. We are considering cutting this film into short sections in line with the single concept idea. We are debating the advantage of a loop design and a small continuous projector to illustrate singly each skill.

____ Film clip - Tumbling ____

C. Developing public relations.
The use of local films for keeping the people of a district informed of the activities of any given segment of the schools program can be applied to most of these films. We found this approach helpful for the parents of handicapped children. Since the program for such students is spread among several buildings and neighboring districts, the 8mm film was used to show the various programs in operation.

Another area that is sometimes misunderstood is the industrial arts program. The clip from our 7th grade program is used to inform lay groups of the variety of activities involved. The teacher shown used the sound track at his last presentation for background effects. He turned the volume down when he wished to comment on the scenes.

In cooperation with the University, we have produced a film to depict the activities at conferences using, in this case, a conference for secretaries.

____ Film clip - Conference Activities ____

We have filmed football games with 8mm. Again this type of film can be used to review the game for the coaches and as a means of instruction for the players or to create interest in the community by making it available for viewing by local groups.

____ Film clip - Football ____

Particularly at the elementary levels, we find that parental pride in the children's activities, and hence our school, is enhanced by filming various projects. These films of elementary pupils are also used in orientation sessions with new residents and P.T.A. groups.

____ Film clip - Elementary Children's Projects ____

We encourage our teachers to use both movie and filmstrips to correlate local events with local science subjects. We hope they will use these media to record pertinent areas they encounter when traveling.

____ Film clip - Washington at Gettysburg ____

There are many other implications for utilizing school produced 8mm films. The production of a film itself can be used as a method of learning for students. Where money is not available or it is not practical to use the field trip, the 8mm film can often show the concepts desired. This is not to suggest that film can be used to replace field trips.

TELEVISION AS A MEANS OF FILM DISTRIBUTION

Peter Greenleaf, New York City Board of Education
David J. Rees, State Education Department

Problem

As a continuation of the Film Chain Experiment and the Physical Factors Study at the Audio-Visual Development and Appraisal Center for the New York City Public Schools, BAVI (Bureau of Audio-Visual Instruction of N.Y. City) attempted a TV film distribution project in order to find out if this could be an effective method of reducing duplication of print purchases.

Objectives

It was decided that the following information would be essential in order to clarify further the feasibility of distribution of some types of film presentations via television as a supplement to the normal function of the BAVI film program:

1. Would teachers accept and use motion pictures provided them via open circuit television?
2. Would televising educational motion pictures introduce teachers not normally using films in their teaching to the advantages of motion pictures?
3. Would televising educational motion pictures introduce teachers normally using film to additional titles of which they are unaware?
4. What would be the most acceptable pattern of repetition in televising motion picture film in order to insure that teachers would have the maximum opportunity to incorporate these films into their teaching activities?

Procedure

Thirty-four titles in 7th year social studies, mathematics, earth science and career guidance were televised. The pattern involved repeating the televising of a film nine times during a period of three alternative days over Ultra High Frequency. The first day a film was repeated three consecutive times in the morning. Two days later the same film was repeated three consecutive times during the afternoon. Two days after this, the same film was repeated three consecutive times straddling the noon hour. Questionnaires reporting reactions were returned to BAVI by June 1, 1963. Two meetings were held with the AVI Coordinators of the schools in the project. A computation of the data was made.

Findings

Of the 400 (out of 40,000) teachers reporting 72% indicated acceptance and 28% non-acceptance of this method of film distribution.

Favorable

1. The room does not have to be darkened.
2. No loss of time in setting up and taking down projector and screen.
3. No projectionist needed.

Unfavorable

1. Film transmission did not correspond with lesson timing or bell schedules.
2. Teachers were unable to select films from a catalogue; to preview; or to use parts; or to stop or re-run films at will.
3. Lack of room for television viewing, resulting from too few TV receivers in the schools.
4. Too much loss of time from moving to and from the television room.
5. Television reception poor.
6. Pictures only in black and white.
7. Small screen size.

Summary of findings

1. There appeared to be a general willingness on the part of teachers to consider and use films made available by TV under certain circumstances.
2. There is need to improve physical factors in TV reception.
3. There is need to further explore the complex problem of costs and facilities.
4. BAVI expects to continue investigating and developing applications of this medium as resources permit.
5. An attractive initial area for TV film distribution would be to satisfy certain seasonal requests for films.

TEACHER CONTROLLED FILM DISTRIBUTION

Henry Queen, New York City

The Goal

A teacher should have available filmed material, appropriate for the subject area and grade level, to communicate with her pupils in the following learning situations:

1. Bringing distant lands and peoples to the classroom
2. Recreating past events
3. Making small objects large enough to see through microphotography
4. Making large objects small enough to comprehend through microphotography
5. Compressing action through time lapse photography
6. Provide motion analysis through high speed photography
7. Illustrating interdependence, function and invisible phenomena through animation
8. Recreating dangerous, expensive or highly skilled performances

It is estimated that a teacher's requirements would range from as few as ten to as many as a hundred titles to cover the term's work.

The Alternatives

The two basic considerations that dictate the plan of availability of filmed materials are cost and required specialized services. The four possible plans are: kit of filmed materials for individual teachers, school or departmental collections, district or borough centers and city-wide central collection. The latter three plans are in use in New York City, meeting three different needs of the teachers involved. In all three plans the measure of success is the teacher control of the materials she is to use.

Cost Considerations

We will use as our base the $55, 11 minute black and white sound motion picture film. Assigned to a specific school or cluster of schools the film has a three year life. Circulated from a center that provides film inspection, repair and maintenance the film life can be extended to 10 years, being discarded on the basis of educational obsolescence.

Plan A, Assignment to an individual teacher. On the elementary level a teacher will probably use the film three times during the year with her single class. Cost per showing averages $2.00. A secondary teacher with five classes to teach would probably use the film twice with each class at a cost of $1.87.

Plan B, Assignment to a school or department. Here the film is shared by all teachers on a grade or in a subject area department. Using our experience of having six teachers on the average grade level or department the cost per showing is 99¢ on the elementary level and 33¢ on the secondary level.

Plan C, Regional film center without technical service. The films in these centers are booked an average of 6 times during the year and are shown to three classes for each booking. The cost per showing is 99¢ for all levels.

Plan D, City-wide film center with technical service and mail delivery. The frequency of booking and utilization pattern are the same as in Plan C. However the film life is extended to 10 years and the cost of personnel, postage and supplies must be added. To place a reel of film in a school under this plan costs 49¢ per showing. This includes:

Amortized cost	$.31
Handling	.10
Supervision and pedagogical	.05
Supplies	.01
Postage	.02

Budget and Inventory Data

Film inventory replacement value	$3,000,000.

Central loan films 10,000 prints
Regional and school centers 24,500 prints

Annual rate of expenditure

Replacement films	$60,000
Handling, postage, supplies	42,500
	$102,500

Utilization data

Central loan showings per year	180,000	(Cost $90,000)
Field center showings per year	420,000	(Cost $12,500)

From the above it can be seen that a central loan film showing costs 50¢ whereas the showing from a regional center is 3¢. The answer to the apparent contradiction to the cost analysis is the condition of the films in the regional centers and the hidden cost of having teachers do the distribution function at the expense of their primary assignment, teaching.

Specialized Services

Before filmed materials can be made available to the classroom teacher a number of services most be provided. Administrative and technical services are clearly a function of a central agency. Professional services must be the function of the teacher consumer, or if delegated to a central agency be under her control.

Functions of the Teacher

1. Indicating needs of the curriculum
2. Indicating titles needed and the time needed
3. Indicating the degree to which the film improved instruction

Function of Central Services - (Supporting professional functions)

1. Review of new filmed materials and correlation with curriculum needs
2. Assist local production to meet special needs
3. Make unfilled needs known to industry
4. Provide advisory service for special teaching problems
5. Provide for sharing of effective practices
6. Maintain a program of withdrawals and replacements to provide maximum educational effectiveness of available materials

- (Supporting administrative and clerical functions)

1. Procurement
2. Inventory control
3. Booking
4. Acknowledgment
5. Shipping and receiving
6. Inspection
7. Maintenance
8. Repair

9. Withdrawals

10. Replacements

The New York City Film Distribution Program

At the present time is is economically infeasible to provide individual teachers with their own filmed materials. With the advent of 8mm film in cartridge units there is some possibility of this for the future. The Bureau is keeping this project under study.

A beginning has been made in the assignment of certain basic films to high school departments where the degree of utilization justifies the cost. World History, Biology and Chemistry have been served successfully in this fashion.

The City has 30 regional centers for local distribution of films. The problem of adequately staffing these centers has been difficult because of the costs involved. A program of centralization is being undertaken as space becomes available. It is easier to staff a large center because of the economies of operation that are possible.

The city-wide central loan collection has proven an economical effective answer to the problem of teacher control with central services. Its inherent limitations with respect to teacher control are:

1. Time lag between initiating and receiving the acknowledgement to an order (4 day minimum)
2. Time lag between booking a film and earliest possible receipt date due to mailing (week minimum)
3. Provision of sufficient prints of basic titles to meet concurrent demands

Specific provisions for direct teacher control are:

1. Teachers are provided with annotated film catalogue indicating grade level of content
2. Teachers may book basic materials a full term in advance and receive confirmation of their order before the term begins
3. Teachers may book by postcard request as little as two weeks in advance to meet unanticipated needs
4. Teachers are urged to complete the evaluation form that is included with each shipment. These are routed to the subject area supervisor for his guidance in taking action in withdrawing the film, replacing it or amending the catalogue listing

Specific professional assistance provided the teacher:

1. A-V Learning, the Bureau newsletter contains lists of accessions, withdrawals and annotation changes to keep the teacher's catalogue current

2. A-V Resources, the Bureau publication issued in subject areas to provide teachers with specific recommendations of materials for her subject

3. Appraisal procedures

4. Approved List of Films, a semi-annual compilation of titles that have been found educationally valuable for use with the New York City curriculum - teachers invited to participate in selecting new titles to replace the old and to recommend the addition of new titles to service uncovered areas of the curriculum

5. Assignment of Bureau staff members to serve as consultants in specific subject areas, grade levels and projects

Conclusion

In administering the film program in New York City a number of materials have been developed. If you are interested in seeing any particular item please check your requirements below, detach and mail as addressed.

(detach and mail for supplementary materials)

November 22, 1963

Bureau of Audio-Visual Instruction
131 Livingston Street
Brooklyn 1, N.Y.

Attention: Henry J. Queen, Supervisor

Please mail to me the items checked below.

_____Central Loan Catalogue of Films, Tapes and Kinescopes
_____Latest issue of A-V Learning
_____Sample "snap-out" booking form
_____Mimeographed teacher training sheet "The Sound Motion Picture"
_____A-V Resources for Secondary School Mathematics - Film
_____Mimeographed flow chart of Central Loan operation
_____Annotated listing of A-V Resources for Teacher Training in the use of motion picture film
_____Instructions for committees evaluating audio-visual materials
_____Fact sheet including statistics of total A-V program

____
(Please print name)

____
(Mailing address)

NEW LIBRARY OF FREE EDUCATIONAL COMMUNICATIONS FILMS

David J. Rees, State Education Department

The Division of Educational Communications is in the process of establishing an Educational Communications cinelib.* The purpose of this cinelib is to provide audiovisual administrators of the schools of this state with a source of motion picture films which they can use in the in-service training of teachers. For this purpose, the films of this cinelib are divided into two basic types - those films which instruct in the use of media and materials and those films which are examples of the advantages of the motion picture film as an instructional tool.

At present, this cinelib comprises 116 films. Since we have only acquired these films about a month ago, there has not been sufficient time for us to prepare a catalog. We do, however, have a listing of available films and we are eager to have these films used. In this respect, we shall now distribute this list of films to you. From this moment, you may order any or as many films as you wish for your in-service teacher training programs.

The film catalog now in preparation for this cinelib will describe films first as to examples of the advantages of the motion picture as an instructional tool and second as to subject matter content. Since we are using these films not to instruct in subject matter but to instruct in the use of films, we therefore feel that for this use the correctness of subject matter is relatively unimportant. The film catalog will have entries such as these:

Five Colorful Birds (Third Edition) 1 reel, 11 mins. CORONET

Film is good example of how the telephoto lens can examine difficult access situations. Example of the editing characteristic of film. Different birds and different camera angles allow the film to portray intimate views of a difficult to photography subject. Bird calls are cued on sound track to associate bird and its characteristic call.

Contents: Present the American goldfinch, cedar waxwing, scarlet tanger, red-headed woodpecker, and eastron bluebird in their natural surroundings. Shows the characteristic colorful plumage and nesting and feeding habits of each bird.

Ocean Tides (Bay of Funday) 1 reel, 14 mins. ENCYCLOPEDIA BRITANNICA FILMS

Film is good example of how film can bring a geographic location into a classroom. Compresses a 12 hour day into the running time of the film. Time lapse photography is used in one scene to show the flood of the incoming tide. Simple animation is employed to explain the natural phenomena of the tides.

Contents: Explains how the constant rhythmic motion of ocean tides is caused by the gravitational pull of the moon and the sun; how the tidal range varies in different localities; and how the tides effect the activities of people who live near the ocean.

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*motion picture film library - Recently coined word, your reactions are welcomed.

Films that instruct in the use of other media and materials will be described solely as to content.

If you wish to use any of these films, please write to Thomas Wilhelm, Division of Educational Communications, New York State Education Department, Albany, New York. Requests must contain an explanation for the intended use of the film. This explanation is important and no film will be mailed without our having such information in our file. I should also mention in closing that requests for the use of these films for the in-service training of math, science, and modern foreign languages will be given preferential consideration.

STATE CONTRACT FOR PROJECTORS AND TAPE RECORDERS

David J. Rees, State Education Department

For the past 25 years, school districts have been purchasing items through state contract. In recent years, school districts have been making increasing use of state contracts to fulfill their purchase requirements. A recent policy decision of the Education Department has prompted studies of more coordinated approaches to increasing the quantities of school equipment and supplies on state contract. Audiovisual equipment and supplies are a large part of the purchases made by school districts.

The Education Department is therefore moving to place audiovisual supplies and equipment on state contract. This would mean that certain items such as 16mm motion picture projectors, overhead projectors and 2 x 2 slide projectors, would be available to school districts at the reduction in price due to bulk purchases. A school district would, of course, have a choice whether to purchase a state contract item or to purchase the same item from any other source. From which source a district purchases is entirely the business of the district.

There are basically two types of state contract, the term estimated quantity type and the definite quantity type. The definite quantity type is used to a limited extent for consummable commodities such as canned corn, floor wax, and mixed paints. This type of contract is awarded after school districts throughout the state have reported their needs to the Division of Standards and Purchase. The Division of Standards and Purchase after receiving requests from school districts for definite quantities, such as 24 cases of canned corn from one district, 6 cans of corn from another and so on, adds up the total requests for canned corn and advertises for bids for the total amount. The lowest bidder is awarded the contract and the school that requested 24 cans of corn has to buy them from the holder of the state contract. So does the district that requested 6 cans and so do all school districts that specifically requested this item. In other words, a contract for definite quantities originates at the request of the school districts or other political sub-divisions, and the state has provided the service of collecting the requests and executing the bidding procedures. It is obligatory, therefore, that with this type of contract the requesting school district must fulfill its intention to purchase.

The other type of state contract is the term-estimated quantity contract. This type of contract results from the Division of Standards and Purchase receiving of requests from state agencies for the purchasing of equipment and supplies. It might be that several state agencies or departments would request say, room air conditioners. Requests for several makes and models of air conditioners would be received by Standards and Purchase. It might also be considered by the Division of Standards and Purchase that other state agencies would be needing air conditioners in the future. Once the Division of Standards and Purchase is convinced that sufficient quantities of an item will be purchased by state agencies, and that through bulk purchase money will be saved the taxpayer, then this Division proceeds to place such an item on state contract. Specifications are determined and advertisements for bids are made and, as with the definite quantity type of contract, an award is made. Once this type of contract is awarded, all state agencies and departments wishing to purchase this item must purchase it through state contract. It might be that several makes and models of air conditioners are on state contract. A state agency that finds none of these air conditioners that would meet its needs would justify a non-state contract purchase by stating extenuating requirements. It might be said then that the term estimated quantity contract originates primarily to fulfill the material needs of state government and at the same time to save the taxpayer money. This type of contract may also have another attribute. It can be made available to all political sub-divisions of the state by writing an extention of price clause into it. Returning to the air conditioners, if the air conditioner contract had an extension of price clause in it, then a school district wishing to purchase an air conditioner could buy an air conditioner, if it wished, through state contract. It must be kept in mind that the school district, as in this hypothetical case, may buy air conditioners from whatever source and at whatever price it wishes. The placing of extension of price clauses on state contracts gives school districts an additional source from which to "shop."

What does this mean to the field of audiovisual? To begin with, the Joint Legislative Committee on School Financing, more popularly known as the Diefendorf Committee, made four general recommendations.

(1) The purchasing services offered to school districts by the State Division of Standards and Purchase should be expanded and used more frequently by the districts.

(2) The Commissioner of Education should provide expert counseling and direction to school districts on purchasing procedures, practices and specifications.

(3) Standard quality and purchase specifications for supply items should be developed for statewide use.

(4) The purchasing procedures followed by districts throughout the State should be simplified and improved.

Of these four general recommendations, the Diefendorf Committee detailed under its first recommendation the following.

> The following recommendations, if implemented, should lead to significant improvements in the purchasing practices of New York State school districts and should produce substantial savings. If school districts would buy through state contracts only those items currently covered and for which the state price is lower than the prices being paid by individual districts, annual savings of over $8.5 million would accrue. If the Division of Standards and Purchase were to expand the lists of commodities for which purchase contracts are negotiated to include all or most of the ordinary needs to the school districts, these savings could be doubled, to over $17 million annually.

Implementation of the suggested improvements would require intensive efforts on the part of the individual districts, as well as the strong support and leadership of the Commissioner of Education and of the Division of Standards and Purchase.

The purchasing services offered to school districts by the Division of Standards and Purchase should be expanded and used more frequently by the districts.

State purchase contracts should be negotiated for more of the items of supply which schools ordinarily need, such as:

- Science supplies of all kinds
- Home economics supplies
- Workshop metals, lumber, tools and equipment
- Weaving, ceramics and other craft supplies
- School buses and supplies as mentioned elsewhere in the report
- Musical instruments
- Audio-visual supplies and equipment
- Additional furniture items

The prices available through State contracts would be made known to all of the districts in the State. Districts could test their ability to obtain more favorable prices locally, and should buy locally where better prices are obtainable; otherwise, they should buy through the state contract.

The Division of Standards and Purchase should collect statistics on the extent to which school districts buy through state contracts. These statistics should be summarized periodically and used for negotiating more advantageous contracts with vendors by showing them the possibilities of receiving larger-quantity orders, if they can offer a competitive price.

The State should give more attention to the special needs of schools by establishing and contracting for products meeting the schools' quality requirements. For example, it was cited by school district officials that some of the cleaning compounds and floor waxes contracted for in the past were not satisfactory for schools because they took too much work to apply and because of their offensive odors and harmful ingredients.

Improved advertising and communications documents and media should be initiated and continued. Clearly understandable and detailed procedural instructions for guiding districts in their use of state services should also be developed, put in writing and distributed to all the districts in the State.

In order to carry out these improvements and expansions of service, a School Supplies Committee should be formed and given the responsibility for planning in detail and forwarding such a program. The members of this Committee should be a purchasing specialist, from the group described in the following recommendations, a specifications engineer from the Division of Standards and Purchase, one or two experienced educational administrators selected at large from one of the school districts in the State. It should be empowered to call upon the expert knowledge of other educators, administrators and knowledgeable persons in State school districts for special advice and study. In general, the affairs of this Committee could be so arranged that its demands on members' time would not interfere with their performance of their regular position assignments.

This School Supplies Committee could be a disciplined force to bring Education and Purchasing together, to modify state purchasing procedures to fit the particular needs of Education, to use the facilities of Purchasing, and without the harshness of "central" to bring to Education the monetary advantages of centralized purchasing and centralized price determination.

These recommendations have been accepted by the Commissioner of Education and the Department staff in all areas are working to carry out these recommendations.

Combined with this policy decision of the Commissioner is the fact that State University is undergoing a rapid expansion program and in so doing is acquiring a great deal of audiovisual equipment. Since State University is a state agency, it therefore acquires a great deal of its equipment through state contract. The Division of Standards and Purchase is reacing to requests for audiovisual equipment by beginning to place these items on state contract. These contracts, since they are written for the needs of schools, have extension of prices clauses on them, which makes them available to all school districts of the State.

At present, there are several state contracts concerning audiovisual equipment in existence that have extension of price clauses added to them. These are:

Projection lamps of all varities	-	Contract award	858
Tape recorders	-	Contract award	2593
Television Receivers and Stands	-	Contract award	746
School and Art Supplies	-	Contract award	907
16mm Motion Picture Projectors	-	(open for bid)	
Radios FM - AM	-	Contract award	382

Only two of these items, television receivers and stands, were placed on state contract at the request of the Education Department. The rest were placed on state contract as the result of requests for purchase by other state agencies.

The Division of Educational Communications in keeping with Department policy has requested the Division of Standards and Purchase place 16mm projectors, 2 x 2 slide projectors, overhead projectors, opaque projectors and language laboratories on state contract. Since 16mm projectors are now open for bid, it was only necessary that the extension of price clause be added to this contract by the Division of Standards and Purchase.

It must be mentioned that at present, the Division of Standards and Purchase caters to the needs of state agencies in placing items on state contract. The reason for this is that these agencies buy the most and that they are compelled to buy through the Division of Standards and Purchase. School districts have not yet fully taken advantage of state contracts with the possible exception of television receivers where 800 were purchased last year. It is felt that once school districts do purchase large quantities of audiovisual equipment that the quantity of these purchases will exceed the purchases made by state agencies. Once this point has been reached, it is apparent that the Division of Standards and Purchase will need to be informed as to specifications for audiovisual equipment required by the school districts of the state. It is imperative that audiovisual personnel apply their professional talents to insure that placing audiovisual equipment and supplies on state contract will result in improved and increased usage of these items in the state's instructional programs. In this respect, the Education Department has established the Continuing Purchasing Committee. This Committee is comprised of school administrators from all sections of the state. The Committee is responsible to the Commissioner. At present, this Committee is preparing lists of materials to be placed on state contract. It is also preparing a booklet on procedures for purchasing through state contract as well as several standard supply lists. Recommendations or considerations that you feel should be made in placing audiovisual items on state contract should be addressed to Dr. Stanley Raub, Chairman of this Committee, in care of the Division of School Business Management, New York State Education Department.

The Division of School Business Management now circulates a pamphlet entitled, "Purchasing News and Tips." This pamphlet is sent to school district administrators. A section of this pamphlet lists school items that are on state contract. If you wish to see this pamphlet, inform your administrator or business manager. In addition, it is also anticipated that the Division of Educational Communications will inform you of audiovisual equipment and supplies that are placed on state contract.

STATE FILM UTILIZATION SURVEY - PLANS FOR IMPROVED DISTRIBUTION AND USE

David J. Rees, State Education Department

Introduction

Historically, the Education Department of this state has always shown leadership in fostering policies and programs which strive to provide for the children of the state the best educational opportunity. Such leadership, in most cases, has been in the manner of creating an incentive for school districts to develop their own improvements in instruction according to the dictates of local needs. Occasionally, the Department has deviated from this policy of indirectly encouraging local incentive. These deviations have been initiated when programs were necessary to improve upon certain school functions where time was imperative and demonstration important. However, such deviations, when the Department has directly given aid for specific purposes, have been from their inception self-liquidating, so that school districts eventually assumed responsibility for the altered function.

The Department has also provided direct material service to school districts when it was deemed such a service could be rendered more efficiently and economically at the state level. In keeping with Department policy of local responsibility, such services were terminated when school districts acquired the potential to provide for themselves. Illustrations of such Department activity may be found in all fields of education. A notable illustration may be found in examining the Department's role in the field of audio visual education.

The State of New York provided lantern slides for the use of teacher-training schools as early as 1886. The Department of Public Instruction in 1895 extended this service for school use in cities and villages. Specific appropriations for visual instruction were made annually by the Legislature. In 1903, these appropriations reached the sum of $38,000. This amounted to approximately 1% of the total State budget for education. The year 1905 found the Department, through its Visual Instruction Division, concentrating heavily on loaning lantern slides to all educational institutions of the state. The loaning of slides continued for forty-four years until 1939, when this service was terminated and the slides were deposited in teacher-training institutions, public schools, museums, and other types of service centers. The Department owned 600,000 slides consisting of 15,000 titles and in its peak year loaned 11,441,261 slides to the schools of the state. However, by 1939, it was decided that school districts were capable of building their own slide collections or concentrating their resources on acquiring the newer media that were becoming available. In the opinion of many educators, the Department's service of loaning slides aided greatly the acceptance of the newer media by the schools of the state.

Another instance of direct aid and participation by the Education Department to foster a new innovation is the present assistance to those schools wishing to explore the applications of television to their educational needs. Television councils also are aided and encouraged by the Department. In addition, the Department instituted a study on the possible applications of television in higher education. This study resulted in specific recommendations for the direct participation by the Department in promoting a state educational television network. Of course, it is impossible to ascertain, at present, the implications of such leadership by the Department in educational television for education in New York State; however, the Department's role in such exploration will insure that whatever benefits may be discovered will be applied to increase the educational opportunity of the children of this state.

The Education Department is continually studying all facets of education to determine how it might better serve the schools of the state. Such studies determine the form of action the Department will follow. The Division of Educational Communications, in keeping with this important function of the Department, decided to investigate the role of 16mm educational motion picture film as a tool of instruction in the schools of New York State, to determine the problems inherent in its use as such, and to recommend to the Commissioner possible action by the Department for the alleviation of such problems.

One might, with interest, speculate concerning the impact of the motion picture on educators at the turn of the century. The vast majority of educators probably dismissed motion picture use in the classroom as impractical. The film was 35mm wide and therefore bulky. It was printed on a nitrate base which made it highly inflammable not to mention explosive. But imagine the excitement such a phenomena as the motion picture generated in the minds of those educators who overlooked the impractical state of motion picture technology. Consider, here was an invention that would allow control of the dimension of time in examining movement. The gait of a horse, the build up of cloud formations, the flight of a bee, all could be freed from the limitations of the human mind in the description of motion. The art of film montage could be used to explain the most complex of seemingly unrelated units. Through animation, any concept could be described. It is no wonder that a man like Thomas A. Edisonin 1925 said:

> "Let us take a class in geography. It seems to me that motion pictures offer here a rather astonishing substitute for the colorless, standardized lessons of the textbooks - not only an opportunity to teach directly from a busy world at work, but with all the atmosphere of adventure, romance, achievement.
>
> We could teach history, of course, in much the same way and literature, and biology - and in our advanced courses, chemistry, geology, physics. There is no limitation to the camera. It is simply a matter of the right direction."*

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*Robert D. Runes, editor, The Diary and Sundry Observations of Thomas Alva Edison (New York: Philosophical Library, 1948), p. 148.

However, with all the imagination for the application of the motion picture to education, motion pictures were still impractical for this purpose at the turn of the century. A major deterrent to the use of the motion picture in the classroom was the fact that the motion picture projector had to be placed in a fireproof enclosure as a safety measure because of the inflammable properties of the film. World War I brought about the invention of 16mm film. This film was printed on an acetate base which was not inflammable. In the early 1920's the 16mm motion picture projector was marketed. With the addition of sound to 16mm in 1933, and color three years later, 16mm motion pictures became one of the most versatile and useful of all media. The educators now had a powerful as well as a practical teaching tool at their disposal. Educators have had the motion picture at their disposal for the past thirty years. It is with this in mind that this study will examine the extent of use of educational film in the public schools of New York State. A most desired result of this study will be recommendations to the Commissioner to facilitate the increased use of the most efficient and effective motion pictures by the teachers of this state.

Methodology

Before attempting a study of the status of the educational motion picture film in the schools of New York State, it was essential to designate what phase of motion picture usage would be investigated. Motion pictures are used for many instructional objectives in many subject areas and on many grade levels. To concentrate on the instructional aspects of the motion picture would entail an elaborate and complex study, much of which would duplicate previous investigations. It was decided, therefore, that a survey should be made concerning itself with the availability of the motion picture film and 16mm projection equipment. It was also decided to inquire as to the teachers' attitudes concerning the use or lack of use of the educational film. By concentrating on materials and attitudes in general, it was felt that the Division of Educational Communications could then be in a position to propose a state level administrative plan or plans by which conditions in regard to the teacher use of motion picture films could be improved.

Forty-six state education departments were queried as to any state directed or coordinated film program either in operation at present or contemplated in the future. Thirty-three education departments responded to these inquiries. These responses allowed insights into workable state directed plans that had some implications for New York State.

A questionnaire listing forty of the most frequent complaints of teachers regarding inconveniences in using film were compiled. This listing became the instrument by which the most objectionable deterrents influencing teachers' attitudes toward film usage were determined. One hundred seventy questionnaires were distributed to teachers by superintendents and principals in sixteen school districts. Of the one hundred seventy distributed questionnaires, one hundred forty-eight were returned to the Department, and the frequency responses to the listed complaints were tabulated. Since the above sample was taken from a cross-section of teachers K-12 and since it was also balanced between city and rural school districts, it was deemed sufficient as an indication of material factors influencing teachers' attitudes.

The equipment and materials questionnaire was a simple form which a school district's A-V coordinator or business manager could indicate quantities of motion picture equipment owned by the district and monies spent for such equipment and its maintenance. Thirty school districts whose total enrollment approached 50% of all the K-12 school enrollment of the State, were selected. Ratios of equipment to students and to teachers were determined from this sample. It was assumed that ratios determined from such a large segment of student and teacher population would be approximately the same for all of the State. It was also assumed that funds spent to purchase and rent motion picture equipment and films would be approximately double for all the State.

The findings of the above mentioned questionnaires were compared, where comparisons were possible, with the findings of the Godfrey Report for New York State with the result that insignificant differences were found. The Godfrey Report is the result of a national study made under the direction of Dr. Eleanor P. Godfrey. The full title of the study is Audiovisual Media in Public Schools and Factors Influencing Their Use. This study was made for the United States Office of Education during the 1962-1963 school year by the Bureau of Social Science Research, Incorporated, of Washington, D.C. The Education Department acquired the Study's New York State I.B.M. cards. These cards contained intelligence pertaining to a stratified random sample of one hundred sixty-seven New York State school districts.

The above findings allowed the formation of several theoretical plans. These plans were devised to determine the extent to which the Education Department could aid schools under existing interpretations of the State's Education Law and Department policy.

On January 16, 1963, a seminar was held in the Education Department (see Appendix B). Representative A-V personnel of village, city and supervisory school districts were invited to participate in discussing these plans with other administrative personnel of school districts, the Department, the State University and Syracuse University. The purpose of conducting the seminar was to acquaint the members with the various plans considered and to explain the plan most favored by the Department. The members of the seminar were invited to criticize the Department's tentative plan and to offer any suggestions or alternate plans that might be of value. A great deal of constructive criticism and valuable suggestions were offered. These were taken into consideration and the result of the seminar was the modification of the Department's tentative plan.

In addition to the discussion of a Department plan for film utilization, advantage was taken of the seminar to discuss the possible merits and implications of such considerations as, placing projectors on state contract, state contract bulk purchase of motion pictures and distribution of motion pictures via television. The members of the seminar presented many profound considerations concerning these matters.

Subsequent to the above mentioned seminar, many consultations were held by staff members throughout the State. City, village and district A-V and other school administrative personnel were consulted. Film producers were most helpful in offering suggestions and advice. In addition, many college and university A-V personnel were consulted. In the Education Department, the Bureau of Rural Administration and the Bureau of Statistical Services consulted with the Division staff and offered many helpful suggestions.

In conclusion, it must be stated that this investigation was conducted in a manner that was felt to be the most economical and practical method of defining the problems inherent in the use of the motion picture film in New York State schools.

The Importance of Educational Film to the Teachers of New York State

More than two million times during the school year in New York State, classrooms are dimmed and projectors are switched on so that students may view films which teachers have selected as an additional resource to the learning process. To provide for the classroom activity of viewing films, the school districts of New York State spend approximately $1,265,000 annually and own motion picture equipment valued at nearly $12,000,000. Such an expenditure and investment make possible the viewing, on the average, of about 10,000 films daily by students in New York State. In keeping with this average, a film is shown daily in one classroom out of seven. To expedite this daily traffic in film, the efforts of over 2,000 people who are employed in one capacity or another by the school districts of the state are required. These people coordinate and supervise various local systems of motion picture distribution. Their responsibilities range from a part-time secretary, who merely facilitates ordering of films in some school districts, to that of a full-time administrator in other districts where film distribution is but one of many aspects to a total communication program. It must also be mentioned that some school districts have no person responsible for obtaining motion picture film. In any event, the teachers of New York State do obtain film and use film in their classrooms. The fact that teachers do use film in quantity as an additional resource to the learning process, aware or unaware of film research findings, seems to indicate that teachers have discovered the educational film to be of value to instruction. Many media and materials are considered to be of value to instruction, such as chalkboards, filmstrips, phonographs, tape recorders, projectors of various types, and educational television. The teacher, as a true professional, selects and uses whatever can be obtained to assist students in realizing specific objectives. It is impossible, therefore, to give rank value to tools of instruction. A gifted teacher might be able to teach some units effectively without even a chalkboard or chalk. Using a chalkboard, this same gifted teacher might find that more subject matter could be covered in a given unit of time with more understanding. This teacher might also discover that using prepared materials of instruction, designed, and tested for particular phases of instruction, might increase efficiency of instruction even more than merely using a chalkboard. Whether a teacher is gifted or not, the teacher will tend to use those tools which training, personal experience, or instinct dictate will best help achieve certain objectives and which are conveniently available. In this respect, excluding the textbook and chalkboard, the filmstrip is the most frequently used took of instruction. It is an estimate that 95% of New York State's 127,000 teachers use the filmstrip and 93% use educational film in classroom instruction. It is also an estimate that 88% of the teachers use the phonograph, 80% the tape recorder, 73% the opaque projector, 58% the flannel board, 55% the 2 x 2 slide projector, and 10% educational television. Next to the filmstrip, it seems that teachers prefer the educational motion picture film.

The 118,000 New York State teachers using educational film for instructional purposes have access to almost 10,000 projectors. On the average, twelve teachers theoretically share a projector. Some school districts apparently feel that one projector is sufficient for every twenty-seven teachers, while at the other extreme, there are school districts that provide a projector for every six teachers. These teachers also share 70,000 films owned by the school districts of the State. In addition, the teachers of the State share annually 200,000 rented films and 140,000 free films. The logistics by which these films and projectors are brought together at the correct time in classrooms greatly affect film utilization as an additional learning resource available to the students of New York State.

New York State teachers obtain educational film from the following general sources:

1. University film libraries located both inside and outside New York State
2. New York State University college film libraries
3. School district film collections
4. Commercial film rental agencies and free loan agencies
5. Cooperative Boards of Educational Services
6. Film unions (several school districts pooling film)
7. Government agencies

The school districts spend approximately $300,000 annually to rent film from various institutions in New York State and also spend approximately $300,000 annually to rent film from institutions located outside of New York State. In addition, school districts spend approximately $200,000 annually to purchase educational film. The task of delivering film to school districts falls mostly to the United States Mail.

Since there are educational films and projectors available to the teachers of this State, what then are some of the deterrents to a teacher's utilizing film as an additional learning resource for students? To obtain an insight into the teacher's problems concerning film utilization, a sample survey was conducted in sixteen school districts of the state. One hundred forty-eight teachers responded to this survey.

Fifty-eight per cent of the responding teachers indicated that they could not depend on an educational film arriving in time to fit into their lesson plans. Thirty-two per cent of the responding teachers indicated that it took too long from the time they ordered a film until they received it. Along these lines, twenty-five per cent of the teachers indicated that they had to order films too far in advance. If these findings are representative of the teachers of the state, then a large segment of New York State teachers are discouraged from using film that they believe to be important to the instruction of their pupils. It would seem that if there are enough films available to teachers, then it should be a simple matter to deliver the film to these teachers. What results is that film orders have to be placed far in advance, and often the delivery of the film is unreliable.

On the average, a film is out of circulation for about two weeks while one teacher is using it. In school districts which own their own film, this time period is considerably shorter. Film, on its return to a library, has first to be inspected for any damage that might have taken place during projection. After inspection, it is placed on a rack in the film vault to await another request. When it is ordered, it must be sent, on the average, three days in advance to meet the booking engagement. Three days must also be allowed for its return to the library after it has been used. The period of use is about three days. Depending on the efficiency of the film library, another period of time is allocated for inspection and repair if necessary. If a teacher does not return a film to the library at the promised time, then bookings for the film become disrupted. It is apparent that in many cases film libraries are closely booked, and that teachers wishing to use a certain film at a given time have to request the film far in advance to be placed on the list of bookings. Popular films with seasonal use and films that are used in Regents subjects, have to be ordered at least six months in advance if a teacher is to be reasonably sure that the film will be available when needed. The two major public school educational film distributional institutions that supply more than half the teachers of New York State claim that they can fulfill only two thirds of the requests made for film by teachers. Even those teachers fortunate enough to obtain films, feel uncertain as to their receiving a film on the date requested because of the shortage of films and the heavy demand made upon available films. The survey revealed that forty-eight per cent of the teachers sampled indicated that they could not be sure that the educational film described in a film catalog would contribute to the unit they were teaching. This situation is less evident in school districts where film is owned and where the district published its own catalog, describing films that were carefully selected and previewed to fit the needs of the local curriculum. At the same time, seventeen per cent of the teachers indicated that they would rather use the time required to preview educational film for other areas of their teaching duties. It was also indicated that seventeen per cent of the teachers stated as a deterrent to using educational film the fact that the school district did not have any person responsible for audio visual instruction. These teachers had no one with whom they might consult as to appropriate choices in ordering educational film. In addition, nineteen per cent of these teachers indicated that educational film was difficult to order.

As to administrative problems concerning educational film on the local level, twenty-eight per cent of the sampled teachers indicated that they had to request and make arrangements for bringing a motion picture projector and screen to their room when they wished to show an educational film. Twenty-three per cent of the teachers indicated that there were no students trained to operate a motion picture projector, and felt that this was a deterrent to their using educational film. Eighteen per cent felt that their classroom should have a permanent screen to avoid the setting up and taking down of portable projection screens.

The conditions described above might tend to discourage teachers from using educational film. To remedy these conditions and thus enable New York State teachers to obtain more films more easily, appropriate action on the state level might be considered. Furthermore, if more films could be made available, then certain considerations would have to be given to the peoper use of such films and to providing teachers with convenient channels by which they could obtain and show films.

Recommendations for Activity on the Part of the Education Department to Create More Conductive Conditions in the State for the Use of Educational Film as an Instructional Resource

It is the policy of the Education Department in matters pertaining to the improvement of instruction to advocate by publication or demonstration, those innovations in educational practices which the Department has found to be of value. The school district accepts, modifies, or rejects such innovations in accordance with the dictates of local needs. The recommendations explained in this chapter are ways by which the Education Department might assist the school districts in improving conditions for using educational film. These recommendations are classified into nine general categories, as follows:

I. Establish procedures to assist school districts through consultant services

II. Create incentive for Boards of Cooperative Educational Services to establish film centers

III. Increase buying power of the school district in respect to motion picture equipment by coordinating purchases on a statewide basis

IV. Establish a preview service for educational film and publish a periodic film review bulletin

V. Investigate various means by which television can aid in the distribution of educational film

VI. Investigate the potential of 8mm film as an instructional resource

VII. Investigate the potential of film for application in large group and in individual study situations

VIII. Create a permanent semi-annual Education Department film seminar

IX. Establish a professional film loan center for films to be made available to district directors of educational communications and other school administrative personnel

STATE LIBRARY FILM PROGRAM

Jack B. Spear, State Education Department

Among such an august body of school A-V specialists, I hurriedly, and somewhat meekly, admit that I feel a bit out of place. During the many sessions of this learned convocation you have seen fascinating demonstrations and heard most interesting ideas on how the student can become a better learner. You have accepted the challenges on the educational horizon, and, as people deeply involved in the future course of education in this state, you have, beyond a shadow of a doubt, assimilated many ideas that will improve classroom instructional programs.

And now I come to you with the story of the New York State Library's film program--and must quickly say that, by and large, we will be talking the next few minutes about a "non-school, non-classroom" film program. However, let me start off by saying that we have two distinct film collections--one on Librarianship, a relatively small group of titles, purchased with State monies, and available for free loan to school libraries; the other, a large group of approximately 1000 titles of "non-teaching" films for the use of adult and juvenile groups in small communities and available for free loan through public libraries.

Let us look a moment at the Librarianship collection. Historically, these were the first films purchased by the State Library. As you might assume, the titles in this collection reflect the work and purpose of the Library Extension Division to help develop public library service within the state.

In glancing over the list, to cite a few, we find such titles as THE LIBRARY: A FAMILY AFFAIR, in which we visit the Brooklyn Public Library and see the impact of that library's services on the everyday lives of the members of a typical family. In FREEDOM TO READ, as you might expect, we wrestle with the problems of censorship by a community group and see some solutions. Then we move to bookmobiles. There are several films that show these libraries on wheels operating in various locations in this country--and even in far away Tasmania.

In BEGINNINGS we visit with the Director of the Detroit Public Library and learn of the dynamic forces facing the library today and hopefully apply these to the recruiting problem. BOOKS FOR ALL, produced by our own New York Library Association, dramatically and realistically shows how the residents of a small town in this state receive excellent library service because their local library is a member of a library system.

As I mentioned, these films may be loaned to school libraries--so let us look at some titles in this collection that relate more directly to school problems. Valuable for faculty meetings, as well as library clubs, would be CARPET UNDER EVERY CLASSROOM, in which we see a high school library serving as a true resource and materials center. In AUDIO VISUAL SUPERVISOR, FACTS ABOUT FILM, and FACTS ABOUT PROJECTION, we learn of the place A-V has in the school and the community, and how to use film to the best advantage. Faculty meetings might be enriched by viewing GIFTED ONES and seeing the recognition being given to the gifted child. Or, what library club wouldn't enjoy Clifton Fadiman discussing THE NOVEL--and for that matter, the English faculty would also appreciate viewing this series. THE BOOK, filmed in Sweden, gives a graphic and imaginative survey of all phases of publishing, and STORY OF A BOOK re-enacts the actual writing of "Pagoo" by the author H. C. Holling, and portrays the behind-the-scenes work involved in creating a much loved children's picture book.

TELLING STORES TO CHILDREN shows the "do's" and "dont's" of story telling and would be particularly helpful to primary teachers. They, along with most of their colleagues in the elementary school would simply enjoy the prize-winning film THE IMPRESSIONABLE YEARS, which portrays a little girl's first experience in the Children's Room of the New York Public Library and explains the appreciation which may develop in children through reading.

Boards, administrative staff, and faculty committees faced with a building program would profit by 23 minutes spent in viewing PLANNING A SCHOOL LIBRARY. In this film they would be exposed to basic principles of good library layout and equipment usage.

I hope this has given you a brief idea of some positive help the State Library makes available to academic libraries.

Now let us turn to our larger general collection of films and briefly examine the background of the "library climate" that led to the establishment of this collection.

I need not tell you that the New York Metropolitan area is one of the world's chief distribution centers for 16mm educational films. The school systems here in the state, have, for many years, been able to successfully use classroom and teaching films as adjuncts to the curriculum primarily because the volume of their use has brought about fairly adequate distribution centers. On the other hand, only the largest public libraries could afford outright purchase of rental of suitable films for community group use. Ironically, most of the public libraries in this state had no source of free films to fulfill this particular need in their communities.

In 1948 legislation was enacted setting up the Regional Library Service Center in Watertown. This first multi-county library system, serving Jefferson, Lewis and St. Lawrence counties, had a large film collection to serve community groups in the area. A very successful pattern of film usage was soon established and from this film experience in the RLSC area we were able to project some of the service patterns on a statewide basis.

During the early 50's this problem was pursued by the New York Library Association, and in cooperation with the Division of Library Extension, plans were carefully developed for a statewide Film Cooperative. To make this plan financially feasible, it was necessary for each participating member library to subscribe the sum of $200 per year. The project failed simply because enough libraries could not see their way clear to joining.

With the coming of the LIBRARY SERVICES ACT OF 1956, federal monies became available on a matching basis to the State Library. One of the original projects submitted for the use of LSA funds was a statewide film program, thereby cashing in, so to speak, on the tremendous groundwork laid by the Cooperative Film Committee. The operation of this project was logically placed in the old Traveling Libraries Section of the Library Extension Division. This section, known perhaps to many of you through the book collections formerly loaned to schools, had been undergoing a reorganization and change of function and had lost several employees. The new film program was carried on with this reduced staff, and of necessity, had to be dove-tailed with many other activities. The first official announcement of this new film program came in April 1958 in THE BOOKMARK.

In our selection of film titles we were strongly influenced by the views of Cecile Starr, the outstanding film critic of "The Saturday Review." She poses this criteria:

> "Does the film stimulate the mind, heart, and possibly the actions of the viewer, towards ends which can be deemed desirable in a democracy?
>
> "Does the film prompt the viewer to enjoy thinking for himself, and to appreciate the accumulated knowledge and honest opinions of other people?
>
> "Does the film help the viewer to experience a variety of personal relationships, and to feel a part of humanity and of the world of nature?"(1)

The boy from Arkansas might say "A bit hifalutin'". But we feel they are thoughful statements, and, we hope our films measure up to these high standards.

On the simpler side, we selected our films to bring adventure, helpful learning, and thoughtful ideas - all of which we hoped would help the individual meet the challenge of today's living. In addition, because of the terms of the Library Services Act, these films were intended primarily for the use of people living in rural areas or in communities of less than 10,000 people; they were selected for non-school use; and they were to be shown without any admission charge.

As librarians we are accustomed to a virtual wealth of reviewing media for books. The situation with film reviews was at the opposite end of the scale. There was a dirth of critical reviews for non-classroom films. Even after careful checking of the few existing reviews we found that over half of the films we previewed were not suitable for our collection. Over 2/3 of the cards in our "Reject" file simply indicate that the film was "too classroomy." This certainly is not to be taken as negative criticism of the film itself because many of the titles we rejected for purchase would be perfectly suited for a curriculum-centered controlled classroom situation.

Since there were existing state film libraries in the New York State Commerce Department, Health Department, Motor Vehicle Department, Conservation Department and Youth Bureau, we did not purchase titles that duplicated their specific fields of interest or holdings.

Because our films would be playing to many informal groups, we felt that color was an important factor. Consequently, wherever a film was available in color we choose this over black and white.

Gradually, from our starting point in 1958, we moved steadily onward and upward. Originally we made direct bookings to small rural communities. Each showing tied up a film for a total of 15 days. (We found it took 7 days to get the film to its destination, 1 day for the showing, and 7 days on the trip to return to us). This meant, then, a maximum potential of only 24 showings per film per year. To help compensate for this and to effect economies in distribution, we started film circuits in the library systems, with rural areas. No particular pattern was adhered to in setting up these circuits, but rather, each system was given the number of films they could best use for the period of time they thought most appropriate. In other words, no set formula was used but interestingly enough, most systems use 15 films for a three month period (60 per year). Today we have 15 circuits in operation. Each headquarters knows well in advance the exact films they will have for a given period. They publish this information for all their member libraries and give it wide distribution within their area. Local public libraries make their bookings from the circuit films at the system. They are delivered and picked up by the system delivery truck on its regular runs. If a library needs a film on a subject not represented in the current group, the system through its teletype, requests a special film from the State Library. In this way our growing reservoir of films is used to backstop specific requests throughout most of the state.

I've mentioned several times that these films from our large collection are for non-school use. Well, then, you're probably wondering why I've taken the time to fill you in on the details of this particular film program. First, my assignment from the Convocation Committee was to tell you about our program so you would understand why it was "non-school." I hope I have done this. But, secondly, I know that you are all members of groups in your own community. And if you live outside New York City, Nassau, Buffalo and Rochester metropolitan areas, it is possible for your group to book these films.

With this in mind let me mention a few of the titles to give you an idea of the type of film we have.

ALBERT SCHWEITZER is a name revered by most of us, and here, in a feature-length film funning 80 minutes, in color, we see and hear a cinema biography of this Nobel Peace Prize winner who has achieved fame in many fields, but above all, has devoted his long full life to serving his fellow men selflessly. A full evening's viewing for a church group or a general audience.

Women's groups will especially enjoy the great documentary WOMEN ON THE MARCH, in which we see the tempestuous struggle for equal rights that characterized the suffragette movement. Confidentially, men's groups get a real kick out of this too.

Volunteer firemen will learn a great deal from the documentary film WHY, which shows actual scenes of the fire in the Our Lady of Angels School in Chicago, and DESIGN FOR DISASTER, which is a dramatic documentary that conveys the feeling and intensity of the battle of one of the greatest holocausts in the history of Los Angeles - the Bel Air disaster on November 6, 1961.

Armchair travelers would be delighted with these 1962 American Film Festival prize winners, THE AGED LAND, showing present-day Greece; and GIUSEPPINA, filmed in Italy this past year.

Problem areas of the world are reflected in many of these films. A few on Africa are: TROPICAL AFRICA, AFRICA DISTURBED, FAMILY OF N'GUMBA, AFRICANS ALL, EAST AFRICA, TWILIGHT FOREST, I'LL SING-NOT CRY, AFRICA - GIANT WITH A FUTURE, AFRICA IS MY HOME, AFRICAN VILLAGE, GIANT IN THE SUN, NIGERIA - NEW NATION, REMNANTS OF A RACE, BUMA - AFRICAN SCULPTURE SPEAKS, AFRICAN WILDLIFE SANCTUARY, MASKS, BLACK AND WHITE IN SOUTH AFRICA, FAMILY OF GHANA, GHANA - NEW NATION, LIFE IN THE SAHARA, PIGMIES OF AFRICA, UNION OF SOUTH AFRICA, AFRICA AWAKENS and ETHIOPIA.

And there are titles for young folks and children too. THIS IS GIRL SCOUTING is of interest to girls, as well as scout leaders. BIRD ISLAND - AN ADVENTURE WITH JACKY AND HERMINE, has all the elements to fascinate a group of children. Then, there are many titles taken directly from famous children's books - HAROLD AND THE PURPLE CRAYON, LENTIL, CAPS FOR SALE, TOM TIT TAT, (you may know this old favorite as Rumpelstiltskin), MADELINE, and STORY ABOUT PING, to touch on just a few.

Grange and farm groups would have deep interest in ALASKA'S MODERN AGRICULTURE with the group of American Farmers and members of our U.S. Department of Agriculture on their visit to the Soviet Union last year.

Fish and game clubs would revel in RAINBOW VALLEY, in fact, they'd probably pack their bags and head for Ennis, Montana, to try their luck in the world's best trout streams.

Most any men's service club - Lions, Rotary, Kiwanis - would be delighted to take a trip under the North Pole with THE NAUTILUS, the atomic powered submarine; or to work with the engineers on THE DEW LINE - our outer distant early warning line across the northern lands of Canada.

Perhaps this gives you a little clearer idea of our large non-school collection of films and the depth of coverage we are trying to build into the film library.

No presentation in this field would be complete without mention of the professional standards that apply. I hasten to add that these are not an afterthought but permeate all of our work in this area. The first guidepost is phrased,

> "The state library agency should organize and, if appropriate, administer services projects among library systems, such as joint purchasing and use of expensive films..." (2)

The second guidepost states,

> "The total resources in each state should include audio-visual collections..." (3)

Summing up, I would like to quote briefly from a manuscript prepared by Professor Harold Goldstein, of the faculty of the University of Illinois Graduate Library School, in which he notes that,

> "Audiovisual services in libraries have had a checkered history. They have been considered on one hand as a 'fringe benefit,' worthy of attention and exploitation only after traditional library services and operations have been judged minimal, standard, or adequate. At the other extreme must be viewed the total effort (in itself actually small and spotty) which incorporates the newer media in an integrated concept of all library operations. Between these two poles is a vast desert of disinterest and disinclination to experiment, as well as a firm conviction on the part of many librarians that little good is to be gained from expenditures of time and money in an activity which is aside from the major emphasis of librarianship.
>
> "It is the idea of audiovisual services as activities only which may be the key to the difficulty. While all library materials must be understood first for what they offer and can do before they are organized into activities. What are they good for? They are the records, in a different physical form, of some of man's activities: phonorecords present man's expression through musical and other sounds; films present through the illusion of motion a record of man's historical, artistic, and social activities...The produced materials are representations of the original message in the form best suited to carry the particular information to those who want or need it. A film, a record, or an art reproduction is not a replacement for a printed item; it can only be useful and appropriate when it provides a stimulus, or fills a need which cannot be satisfied as well by any other type of material. The lack of understanding of this concept is fundamentally the reason for the uneven growth in the collection and use of non-print materials in public and academic libraries across the nation."

It is our hope that the State Library film collection will permit further understanding of the role of A-V materials in library service, and that we can be of increasing service to the public library systems of the state. To this end we are currently evaluating our film program. It may well be that in the months and years to come our direction will be towards a more specialized collection meeting needs not satisfied nor met in the smaller library systems.

FOOTNOTES

(1) Starr, Cecile. "KEEP UP WITH FILMS." ALA Bulletin. 50: (April 1956) 209.

(2) American Library Association. Public Library Service, a Guide to Evaluation with Minimum Standards. A.L.A. Chicago. 1956. page 17.

(3) American Library Association. Standards For Library Functions at the State Level. A.L.A. Chicago. 1963. page 13.

PROGRAMED INSTRUCTION AND TEACHING MACHINES

TEACHER TRAINING THROUGH PROGRAMED INSTRUCTION

Morris Freedman, New York City Board of Education

Need for Programed Materials

The most recent evaluative surveys of the New York City Public Schools have all disclosed the problem of teacher turn-over. The reasons for these personnel changes are not always clear. However, to aid the many new teachers assigned to the schools each year, large scale programs of in-service education are in effect. A segment of this city-wide training is a responsibility of the Board of Education's Bureau of Audio-Visual Instruction. Without full-time audio-visual specialists in the schools training has been limited. As a result the Bureau has begun preparing programed materials which teachers and students may use to teach themselves the skills of operating audio-visual equipment.

Preparing the Programed Text

As a first project a programed text was prepared on the operation of the Revere tape recorder, Model T-2000. (This equipment is currently being supplied to the schools.) Terminal behaviors were specified as the preparation and playback of a tape recording. The target population included students with at least fifth grade reading ability as well as teachers. Designed to teach basic skills, the program presumes that subjects have no knowledge of tape recording or recorders. The subjects' learning repertoires, it was anticipated, need not include even the basic ability to identify a tape recorder, an electrical wall outlet or a microphone.

Diagrams and multiple choice stimuli were used to direct the subject and to offer repeated confirmation and reinforcement.. The program was staple bound and its pages duplicated through the use of stenofaxed-prepared mimeographed stencils. The production of the program required no specially employed personnel. Programing, art work and duplication were all completely by the existing staff of the Bureau.

Program Mode of Presentation

The programed text contains 78 frames and comes complete with an answer sheet and instructions so that the presence of a teacher is not required. Combining Skinnerian and Crowderian technique, the program is characterized by linear frames presented vertically; small and large step frames; and multiple choice and fill-in, or open ended stimuli (requiring constructed response.)

For the first twenty-two frames the subject is led through an understanding of terms and the uses of a tape recorder. The required responses are constructed. The remainder of the text presents multiple choice stimuli to the subject in the form of lettered diagrams. Subjects respond by writing the letter (A, B, C or D) that corresponds to the correct diagram. Correct answers are generally presented at the top of each page so that reinforcement is completed with the turn of the page.

Testing the Program

Three subjects were given the program at different times in an attempt to discover ambiguous and poorly constructed frames, and to reduce the error rate. After the first subject's completion, twenty frames were uncovered which needed editing. Each of the subsequent subject's error rates were reduced considerably. The third subject had difficulty with merely one frame.

The effectiveness of the program was tentatively determined through its use with ten subjects including both students and teachers. Four sixth graders of average ability and one high school student participated along with five teachers. All of the test subjects were pre-tested. Immediately following the completion of the program a post-test was administered. Anecdotal comments were also recorded.

At the start of the ten minute pre-test subjects were instructed to open the tape recorder, prepare and playback a recording, and then close the recorder. If a subject successfully completed these tasks he was excused from the text. Subjects who could complete the required operations within a few extra minutes were also excused. Those subjects showing little or no competency with the required skills in this pre-test period were given the programed text. It was apparent that all the subjects selected for testing the effectiveness of the program exhibited a general unfamiliarity with the skills of tape recording.

Observations and Comments

The observations especially of the sixth grade pupils were especially illuminating with regard to their use of the programed text material. Students needed to adjust to this new mode of teaching with its presentation of cued frames; the use of arrows to direct the subject's attention to specific parts of a diagram; and the presentation of correct answers on each page. It was often found that pupils hesitated at the beginning of the program and were uncertain about what was expected. It was necessary, almost without exception, to explain the method of response. This may indicate that the initial directions were poor or that sample frames were necessary. Generally, after their first response, the subjects discovered the expected pattern and moved along smoothly. There was a further transition later on in the program from a constructed to a multiple choice format. This too required explanation and readjustment before the response pattern was established.

Other general observations are worthy of note. Pupils smiled or nodded when they checked and found their answers correct. There was no noticeable reaction from adults. There was a tendency of subjects at specific points in the program to anticipate several steps and to move ahead of the program. (Some form of branching may be indicated at these junctures.) One youngster thought about the answers, checked herself against the correct answers and then wrote her response. This form of covert responding may be satisfactory if, of course, answers were not merely copied.

Some of the recorded anecdotal comments of teachers are of interest.

"...program seemed to go quickly."
"It was fun."
"Pictures helped."
"(I now) feel confident in using tape recorder in front of class."
"The manual was very helpful. I actually made a recording and am not mechanically inclined."
"I think this is a highly successful method in teaching the use of a machine."
"The manual is clear and the directions precise."
"...with several students around and especially, those who are experienced, the novice, I think becomes shy and self-conscious."

Some of the student comments were:

"It is interesting doing it by myself."
"It's just as easy to learn this way, in fact, probably easier."

Results

On completion of the program a post-test was administered. Subjects were instructed, as in the pre-test, to open the tape recorder, prepare and playback a tape recording and close the recorder. The total time of each subject's post-test is shown in Table I. The results were clearly observable in the performance of the skills tested. All subjects were able to perform the skills.

TABLE I

	Time (in minutes) of Ten Subjects in Completing Programed Text and Post-Test									
Programed Text	E	E	E	G	H	T	T	T	T	T
	50	59	59	50	48	38	46	34	56	60
Post-Test	10	6	12	8	8	1	3	1	3	13

E - Elementary School Student
H - High School Student
T - Teacher

Conclusions

If the criterion of program effectiveness is the ability of the learner to demonstrate an observable change in behavior, as for example, in the performance of a skill, then we may judge this programed text by observation. Using this criterion it was clear that the programed material effectively taught the rudimentary skills involved in tape recording. Equally as lucid, however, was the need to modify certain aspects of the program so that it may be used as a complete package, and given to students and teachers without further instruction. The implications of our initial impressions, however, are that the programing of skills is an effective way to provide in-service training to teachers. Practice, of course, is necessary but the initial fear of teachers especially of mechanical or electronic equipment, may be reduced when programs are used. The absence of observers and instructors also may remove inhibitions from those teachers who are often reluctant to admit their lack of skill.

Additional programs should be constructed to assist in the orientation of new teachers to guide them through general routines and to instruct them in content areas in which they have had no preparation.

Next Steps

A follow-up test is needed to determine the ability of subjects to recall skills taught by a programed text. In addition, provisions must be made to permit subjects to practice these skills in the school. However, the initial experience with the program is useful. The Bureau of Audio-Visual Instruction has duplicated copies for distribution to the schools. Our first use of these materials will be as assignments for teachers registered in a televised in-service course to begin February 5, 1964.

The Bureau is presently attempting to cope with other problem areas through the use of programed materials. In production presently are self-instructional materials which are designed to teach teachers and students how to operate a 16mm sound projector. Another program is being produced to teach the skills involved in film inspection and splicing. These projects are our first steps as we begin to touch upon the enormity of the implications of programed instruction for teacher training.

TEACHING MACHINES AND PROGRAMED LEARNING IN ITHACA

James I. Mason, Superintendent, Ithaca City School District
Edward W. Moy, Ithaca City School District

Technological Automation has become an intrinsic element of the educational enterprise in the Ithaca City School District. Its growth has been predicated on common sense and a scientific approach to orderly change. It has encompassed the introduction of audio-visual devices, the use of teaching machines and programed materials, the infusion of data processing into our secondary school scheduling, pupil record maintenance and business practices, and the attending modifications of our curricular and instructional programs. It has, in every sense of the word, become fused with the district's comprehensive program of research and experimentation.

The Ithaca City School District lies in the Finger Lakes Region of New York State, comprising some 155 square miles. We like to think of ourselves as being in the vanguard of school districts that are introducing new educational insights and understandings to the education scene. The district has just adopted a five-year plan entitled "The Eight Elements of Excellence," designed to place our program in a posture of quality.

The District can best be characterized as an exciting school system seeking quality education. It provides an exceptionally rich variety of educational programs to meet the individual needs of its 8100 students. Its close association with Cornell University and Ithaca College, plus the many cultural and recreational activities, provide a community setting that affords numerous advantages. It is a growing enterprise, acquiring teachers and buildings to meet the needs of its stimulating and diverse student population.

The unique geographic position of the Ithaca City School District and Cornell University and Ithaca College establishes a natural educational setting for joint research projects. Numerous cooperative programs have been undertaken in the past, creating an excellent environment for continued research and experimentation.

The district has a basic policy requiring that all research and experimental projects undertaken in the school district must add to or complement the program. We believe that each of the studies now under way makes a direct contribution to the improvement of our educational program.

Our wholehearted, yet logical and scientific, infusion of automation into our school enterprise is premised on several factors. We believe there is no place in education for status quo, yet we progress deliberately, with an awareness of purpose and a knowledge of direction. We must be free to experiment and, therefore, free to err, but we must not forget our responsibility to use the resources available to us to the best benefit of our students. There is no room for gaudy fads that do not contribute to our goals or for frills that rob us of the substance of our purpose. Only through objective research may these newer developments in the field of instruction be tested sufficiently to demonstrate their superiority over the procedures they seek to replace.

The full scope of our commitment to automation can only be appreciated by overviewing the complete spectrum of educational communications in the school district. To present adequately these technical devices, we will present our current position in each, emphasizing the role of teaching machines and programed learning.

Communications Techniques

Language Laboratory: We have experimented for several years with the use of a language laboratory and will open two, thirty-station units with the completion of an addition to our high school. There will be a master console control room between the labs, operated by a special technician. This will permit a more flexible pattern for scheduling both teachers and pupils and eliminate the need to train all language teachers--one of the major stumbling blocks to automatic our language teaching.

Reading Machines: We make use of the E.D.L. controlled readers, reading pacers and Craig Readers. These machines will become the basis of a reading laboratory to be opened in the senior high school next year. We are in the process of expanding both personnel and programs in this most critical subject area, with an aim toward the establishment of a district-wide reading clinic.

Educational Television: We have initiated a pilot project in closed circuit television; formal broadcasting will begin in February 1963. Ithaca College's Radio and Television Department, which includes an excellent broadcasting studio and technical personnel, is working with us on this project. Further, the local television cable owner has made his facilities available to the district at no cost, enabling us to transmit to all but two of our buildings. While it is much too early to predict outcomes, we see classroom television as a wonderful supplement to the teacher and follow the viewpoint that TV should become part of our regular audio-visual aids.

Overhead Projectors: They have been in use in the school district for the past five years and have established a firm foundation for continued and expanded use by classroom teachers. Several excellent projects have been developed from their usage and teacher requests for the projector grow greater each year. Their value as a classroom aid is unquestioned, the need for materials remains the only drawback to their mass usage.

Eight Millimeter Automatic Projectors: We are currently experimenting with this cartridge loading projector and hope to introduce it, in quantity, into the system in the near future. It, too, has the supply limitation as major problem in terms of its broad usage.

Micro-Projector: We have used the micro-projector for over ten years and have one in each of our school buildings. They help to build for each school a complete complex of audio-visual equipment.

Sound Projectors: We currently have over forty of these in use in the school district; the number in each building is programed according to the pupil population. Our communications center maintains a certain number for special use in the district and in conjunction with our community program.

Tape Recorders: There are approximately over sixty tape recorders in use throughout the school district and orders have been placed for eight additional. This equipment is used at all levels and by a variety of teachers in conjunction with their classroom programs.

Record Players: We have over three hundred record players in the school district at the present time, which is approximately two for every three staff members. This is one of the first and consistently valuable audio-visual tools used in our educational enterprise.

Data Processing (the computer): The system has a fairly extensive IBM data processing center now in operation. It will be expanded and housed in a new unit now under construction. The district currently handles its bookkeeping, accounting and payroll via this technique; attendance and census are being programed at the present time. Scheduling and the maintenance of pupil personnel records will be added during 1964, providing a multiplicity of operational gains. An experimental course on Computer Mathematics is now under way in conjunction with Cornell University; additional courses in Key-Punching, Programing and Service will be added in the coming year.

Teaching Machines and Programed Learning

The school district has introduced many of the current crop of teaching machines and programed materials in an on-going effort to keep pace with our changing educational scene. While I feel we have only scratched the surface in this dynamic technological development, we possess the know-how and wherewithal to make some significant contributions to the educational growth of this new (yet old) innovation. Possessed of a talented director of educational communications, a research-experimentally minded staff, an interested and dedicated board of education, and a citizenry that demands quality education, we have the ideal foundation for the infusion and development of programed learning and its required "hardware"--the teaching machine.

It would be impossible to cover all of our efforts in this new and very fascinating field, so we will attempt to narrow our horizon and treat five specific endeavors in this area:

Mathematics: We instituted a program in four schools with two first grades involved in each. One of the grades followed the structured mathematics as developed by Catherine Stern of Houghton Mifflin; based on measurement. This approach emphasized the measuring of units and presented programed materials in workbook form in association with models, as seen on a slide. We felt this was quite successful and led us to plan a supplemental program in conjunction with our adoption of "Modern Mathematics" on a K-12 basis. We also used the Encyclopedia Britannica math workshop (deductive reasoning) in conjunction with a teacher workshop held in the district.

English: Like many school districts, we have utilized "English 2600" (now "3600") in the school district. This was introduced in our eighth grade English classes and was fairly successful. It is now used as supplementary material in our junior high English program. In addition, we had a special project in punctuation and spelling, using T.M.I. Grolier with an individual student in the slow-learner category.

Senior High School: Several special projects have been prepared at the senior high school, one of which received some excellent publicity and recognition for our home economics department. This project combined programed materials, tape recorders and sample patterns as a follow-up to an initial presentation by the teacher. The slide gives a visual interpretation of its operation by one of our students. We also instituted a special program for a deaf student in math and algebra, using TEMAC (Encyclopedia Britannica program).

Adult Education: We used the TMI algebra and Tutor Text materials as a math refresher course in our adult education program. This had very limited usage but proved that it could be developed as a re-training program and preparation for high school equivalency test.

In-service Training for Teachers: We have used movies, filmstrips, demonstrations and lectures to acquaint our teachers with the various programs and teaching machines available. This has encouraged members of the staff to develop individual projects, such as the one in home economics. It has also created a great deal of interest in the field. We have experimented with or used some 15 programs and 9 machines.

We have already cited several other teaching machines in conjunction with our earlier slides on our over-all effort in communications. As I noted earlier, we think that a good foundation and environment for the growth and development of programed learning and teaching machines has been established in the Ithaca City School District. Further growth and development in this area now depends upon the acquitision of programs and machines and our continued cultivation and encouragement of the interest fostered over the past years.

Summary and Conclusions

The introduction of these programs and machines into our school district has been carried out in an orderly and organized pattern, one of the most essential needs when introducing new innovations. I would recommend strongly the establishment of follow-up procedures, including evaluation techniques, in order to guarantee the success and continued use of the programs introduced. Programed learning and teaching machines do not represent a cure-all for our educational problems and ills. They do open the door to several excellent techniques which serve to stimulate the interest of children and it is a well-known fact that "interest creates learning." I am sure we are all aware that the program is the critical factor and not the machine; the machine is no more than a mechanical moron until it receives its necessary program.

The future use of the techniques discussed today in the Ithaca City School District is assured and we will be making dramatic breakthroughs in the field of data processing in the near future. Our current programing includes a course in computer mathematics. We will be expanding into the field of data process, data analysis, and computer services. The academic setting of Ithaca and our close working relationship with Cornell University and Ithaca College provide us with an experimental laboratory second to none in the State of New York. We are dedicated to the goal of constant inquiry and continued research, which should lead the district to a point wherein we can say that we have a district-wide learning laboratory. One last item, in closing, that I might mention, involves a major project which we will be submitting to the Ford Foundation early in December. Regardless of Ford's acceptance or rejection of this program,it has contributed greatly to our work in the fields discussed today and should provide guidelines and direction for similar efforts in other programs.

In conclusion, we look at programed learning and teaching machines as an excellent addition to our communication techniques and feel that they provide a major gain in the cultivation of interests on the part of our students and this produces real learning, the fundamental goal of our educational program.

TEACHING TEACHERS TO "PROGRAM"

Joseph Millman, New York City Board of Education

"Some persons discuss instructional technology as though there were a real choice whether we should introduce it in the schools. There is no such choice. Our only choice is whether we use educational technology wisely and planfully or whether we use it grudgingly, ineptly, planlessly."[1] One of the questions that need answering relates to the teacher's role in the production of programs. My hypothesis is, Teachers must be capable of writing programs as part of their professional ability. Why should a teacher be capable of writing a program?

First, programs are in limited supply to date. The official tabulation given in Program 63[2] gives this information.

Total number of programs available	352
Elementary level	54
Junior High level	63
High School	147
College	32
Others	56

In 1962 there were 122 programs available. The increase for 1963 seems negligable by any comparison. If we compare this with the number of textbooks that are available or with the number of programs that could be used, we find that the commercial source does not and will not meet the needs of the schools for many years to come.

Second, teachers require an ability and knowledge to select and evaluate programs for classroom use. Too many administrators and teachers today are willing to accept programs because they are the only ones available. There is need for a careful evaluation and selection policy to be adopted by each school system. The "Interim Report of the Joint Committee on Programmed Instruction and Teaching Machines" has taken a giant step in suggesting such criteria for assessing programs. The criteria used are:

Content: Most programs are used in connection with subject matter orientation. These programs should meet the high standards of scholarship established for material.

Program Construction: A review of the structure of the program should be made, frame length, branching sequence, prompting patterns and other techniques are important to establish.

Development of Program: Teachers are directed to request from publishing companies the methods of the program development from "tryout" to "revision."

Author Qualification: It is necessary that the author primarily be a good teacher. He should have background and strength in the subject matter area in addition to a knowledge and ability in constructing and writing programs. Teachers should become familiar with an entire new group of authors in this field. Check Program 63 for some of their names.

There are other criteria that can be established, however this basic list of five will suffice until a greater familiarity with programing is achieved by each teacher.

Third, it is important to understand that programing principles affect regular teaching patterns. The principle of small step has long been a part of teachers' fundamental understanding. The fault lies with the concept that the teacher is able to estimate the ability of a group as bright or slow and carry this through for all subject areas. The wide ability range of each student in different subject areas and skills is becoming more evident. Programing encourages the teacher to understand the term, "target population." Programs therefore will not be distributed to the entire classes, but only to those students who could benefit from the particular program. In a similar manner, individualization of instruction is a must for all lessons.

The principle of active responding encourages the student to participate in his own educational development. The language laboratory has shown the way a subject area can change his basic orientation of instruction.

Another recognized principle is immediate confirmation. The teacher will take a new look at his presentation and testing procedures. Attempts are being made throughout the country to have television programs and college lecture techniques reflect the immediate response aspect of programed instruction.

Self-pacing is an oft quoted principle. Individual differences is the prime factor in self-pacing. The new concepts of the non-graded classroom and team teaching with its individualized instruction requires programed instruction principles.

The final principle of program testing always alerts the teacher to what the learning situation is in her class. She gets this information by the feedback that occurs through continuous testing and revision of the program.

Fourth, school authorities indicate there should be a continuous exploration in this field of programed instruction.

The NEA Project on Instruction states, "Schools should make use, with proper safeguards, of self-instructional materials and devices (programed instruction) that facilitate varied learning opportunities and continuous progress for learners of widely divergent abilities. The use of programed instruction should be accompanied by a vigorous program of research and experimentation."

Wilbur Schramm, Director of the Institute for Communication Research at Stanford University, says, "It seems reasonable at this time to lay aside the question of whether students learn from programed instruction. They do. So far as we have evidence they learn a great deal."

It seems quite evident that the teacher requires a knowledge of programed instruction in order to fill the gaps and limitations of available commercial programs, select and evaluate commercial programs for use with students, and improve his own methods of instruction by utilizing the principles and disciplines of programed instruction, while research and educational authorities indicate successful utilization patterns within the classroom. This evidence seems substantial enough for each school district to proceed in the direction of training teachers to develop some ability in this field.

I submit that the quickest way to achieve the objective as stated is to teach teachers how to "program."

The standard training procedures may be put into effect. There are certain limitations to some. Let us establish what the goals of these instructional programs should be, then analyze the procedures in terms of these goals.

1. Develop an understanding and background of programed instruction.

2. Understand the technical development of a program in order to evaluate and select its usefulness.

3. Develop creative instructional patterns utilizing programed instructional materials based upon teacher and student needs.

4. Utilize programed instruction principles in order to improve the daily instructional activity.

5. Write program segments or modules for specific teacher requirements.

Let us examine two techniques of in-service training. First, the short term workshop or institute can be used within each school system. The physical writing of the program requires time and energy in addition to a certain creativity that is poured into the format and writing. This procedure cannot be condensed into an afternoon or even three days of activity. About thirty hours of work is required to accomplish the goals indicated. At the least two full weeks of work would be required, if a short period of instruction is desired.

Second, the in-service course seems best suited to meet all the goals established. This course should follow the standard two-hour, five-session format. In addition, the course given by the school district permits:

1. Flexible sessions to follow program development.

2. Student availability for testing and feedback during and after course time.

3. Departments or groups of teachers working on cooperative projects in programed instruction.

4. The obvious support given to programed instruction by a school district through in-service courses aiding the teacher in many ways, such as additional time and availability of money.

In the final analysis, teachers must be capable of writing programs as part of their professional ability. This can be accomplished efficiently and effectively through an in-service course given on a school district basis.

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UTILIZATION PATTERNS IN PROGRAMED INSTRUCTION

William F. Ryan, State Education Department

Introduction

This presentation is a take off on a recent publication prepared to guide and direct educators in New York State in understanding, selecting, utilizing and evaluating teaching machines and programed learning.

The information presented herein was gathered (in many ways) by the Bureau of Classroom Communications Teaching Machines and Programed Learning Project. The project staff has been actively involved in school visitations, inter-departmental curriculum and standards meetings, and conferences with professional associations such as the American Educational Research Association, the American Psychological Association, National Education Association's Department of Audiovisual Instruction, and the National Society for Programed Instruction. The staff members have continuously participated on national steering committees in this field and have kept in constant contact with the Center for Programed Instruction, regional programing associations and military and industrial organizations.

Programed instruction is relatively new and thus far largely experimental. It is the belief of the Division of Educational Communications that it is practical at this time to introduce programed instruction into the curriculum, administering and using the principles such as those outlined in this speach.

While we encourage schools to begin using and evaluating this media, we recognize the field as a new one and therefore we stand ready to assist in every way possible with the services (later explained) of the Division of Educational Communications.

It is the feeling of the Division of Educational Communications that teaching machines and programed learning, when effectively utilized, make a positive, strong contribution to teaching and learning. Working cooperatively, the State Department of Education and the individual schools can achieve the potentials which programed instruction promises, and maintain a constant relationship to reach those aims of effective instruction.

Definitions

The definition of terms has been, and is, a problem in the communications field. This has been evidenced in a recent Audiovisual Communications publication which treated definition and terminology in the educational communications field. Hence, it seems particularly appropriate to begin this handbook with a clear statement of what we are going to consider as programed instruction.

Programed Instruction - The utilization of programed materials in achieving educational objectives.[1]

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[1] See Glossary #2, reprinted from Monography #1, the *Changing Role of the Audiovisual Process*: A Definition and A Glossary of Related Terms for further refinements of this definition.

To produce optimal learning, the following elements of programed instruction must be present.[2]

1. Active response by the student
2. Small steps in which careful control of stimuli produces gradual increments in mastery of the subject
3. Immediate feedback for each response
4. Self-pacing or rate individualization at which the learner masters the material
5. Low error rate for the individual learner as a consequence of the effective operation of items 1-4 above

Teaching Machines - Devices that house, display and present instructional programs. Provisions for suitable responses on the part of the student and tutorial feedback must be present. By these criteria, audiovisual aids, as well as simulators and other devices, although they might be machines used in teaching, do not qualify as teaching machines. Teaching macines may or may not score responses or tally errors. With constructed respnse programs, the evaluation of the answer and error analysis must be left to the student pending the feasible development of optical scanning and mechanized semantic analyzers.

Selected Readings

Since the introduction of the programing concept for classroom instruction, a voluminous amount of written material has been published. The following listing, though not exhaustive, contains valuable reference material and resource information. The selected list is representative of the several texts, research materials, and programing literature available. Many of the references below contain more extensive listings of programed instruction material.

Selected Bibliography

Coulson, John E., "Programed Learning and Computer-Based Instruction," New York: John Wiley and Sons, Inc., 1962. 291 pp.

Cramm, David, Explaining, "Teaching Machines and Programing," San Francisco: Fearon Publishers, 1961. 86 pp.

Deterline, William A., "An Introduction to Programed Instruction," Englewood Cliffs, New Jersey; Prentice-Hall, Inc., 1962. 131 pp.

Finn, James D., and Perrin, Donald G., "Teaching Machines and Programed Learning, 1962: A Survey of the Industry," Washington, D.C.: National Education Association, 1962. 85 pp.

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[2] The material on this page is presented as a summary of the definitions provided in the NDEA Policy Bulletin, Series III, Number 13, June 12, 1963. The bulletin concerns itself with federal financial participation under Title III of the National Defense Education Act in the cost of progamed learning materials and teaching machines.

Finn, James D., Perrin, Donald G., and Campion, Lee E., "Studies in the Growth of Instructional Technology, I: Audio-Visual Instrumentation for Instruction in the Public Schools, 1930-1960, A Basis for Take-Off," Washington: National Education Association.

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Fry Edward, "Teaching Machines and Programed Learning: An Introduction to Autoinstruction," New York: McGraw-Hill Book Company, 1963. 244 pp.

Galenter, Eugene H., (Ed.), "Automatic Teaching: The State Of the Art," New York: John Wiley and Sons, 1959. 198 pp.

Hendershot, Carl, "Programed Learning and Teaching Machines Summary," Delta College, University Center, Michigan, 1963.

Leavitt, Jerome E., and Edgar, Rille J., "Programed Learning and Teaching Machines - Part I," bibliography. Salem, Oregon: Instructional Services Section, State Department of Education, June 1961.

Lumsdaine, Arthur A., and Glaser, Robert, (Eds.), "Teaching Machines and Programed Learning: A Source Book," Washington, Department of Audio-Visual Instruction, National Education Association, 1960. 724 pp.

Lysaught, Jerome P., and Williams, Clarence M., "A Guide to Programed Instruction," New York: John Wiley and Sons, 1963. 180 pp.

Mager, Robert F., "Preparing Objectives for Programed Instruction," San Francisco: Fearon Publishers, 1962. 62 pp.

Margulies, Stuart, and Eigen, Lewis D., (Eds.), "Applied Programed Instruction," New York: John Wiley and Sons, 1962. 387 pp.

Markle, Susan Myer, Eigen, Lewis D., and Komoski, P. Kenneth, "A Programed Primer on Programming," Vol. I, 2nd Edition, New York: The Center for Programed Instruction, Inc., 1961. 28 pp.

Markle, Susan Meyer, "A Programed Primer on Programing," Vol. II, 2nd Edition, New York: The Center for Programed Instruction, Inc., 1961. 44 pp.

Schramm, Wilbur, "Programed Instruction, Today and Tomorrow," New York: The Fund for the Advancement of Education, November, 1962. 74 pp.

Stolurow, Lawrence M., "Teaching by Machine," Washington: U.S. Department of Health, Education, and Welfare, Office of Education, 1961. 173 pp.

Bibliography of Media

The following films and filmstrips are available on short term loan from the Teaching Machine and Programed Learning Project of the Bureau of Classroom

Communications, State Education Department, Albany 1, New York. The purpose of these films and filmstrips is to present basic information to personnel who want to learn about programing, and who wish to use programs in their work. In some films, the actual teaching devices are out dated, however, the examples illustrating the usage of the devices remain most valuable. The films are especially helpful in explaining teaching machines and programed learning to educators and laymen who are just beginning a study of this field.

Films

AUTO-INSTRUCTIONAL PROGRAMING. (Kinescope, 40 min., second, b-w) Lawrence M. Stolurow, University of Illinois. Presents the functions of programed instruction as described in the Office of Education monograph. (Office of Education Publication, No. OE 3-4010, Cooperative Research Monograph, No. 6). Illustrates programed materials, and compares the use of the teaching machine and programed materials with the textbooks.

LEARNING AND BEHAVIOR (THE TEACHING MACHINE). (26 min., sound, b-w) Carousel Films. Explains the learning process, how learning and conditioning can be measured in the laboratory, and B. F. Skinner's theory or reinforcement. Produced by CBS.

ONE STEP AT A TIME. (30 min., sound, color, 16mm) American Institute for Research. Defines programed instruction, reports research findings concerning its effectiveness, and suggests possible means of using programed instruction in the schools.

A PROBING MIND. (29 min., sound, b-w, 16mm) Norwood Film. Illustrates the uses of new educational media - films, television, recordings, teaching machines - and well-equipped laboratories in the teaching of high school science.

PROGRAMED LEARNING WITH A TEACHING MACHINE: DEMONSTRATION WITH THIRD-GRADE CHILDREN. (15 min., silent with captions, b-w). Lawrence M. Stolurow, University of Illinois. Shows one-half of the class working with teaching machines while the teacher works with the other half.

TEACHING MACHINES AND PROGRAMED LEARNING. (29 min., sound, b-w, 16mm) National Education Association, DAVI. Presents B. F. Skinner explaining the theory of programed learning, Arthur Lumsdaine describing a variety of teaching machines and programed materials, and Robert Glaser discussing the implication of such machines and materials for education.

Filmstrips

AN EXAMPLE OF A TEACHING MACHINE PROGRAM. (62 frames, color). Basic Skill Films. Shows an example of a program on how to read the color code on resistors.

TEACHING MACHINES. (62 frames, color). Basic Skill Films. Gives a general overview of programing.

The following three films, also available from the Bureau of Classroom Communications, furnish background information in the theory of learning as applied to programed instruction.

Films

CONTROLLING BEHAVIOR THROUGH REINFORCEMENT, 16mm, sound, black and white, McGraw-Hill Films, 1963.

This film shows that by reinforcing an organism on different schedules, we can control not only how fast it works at any given time, but also the way it distributes that work within a given period of time. These results are demonstrated with pigeons under controlled laboratory conditions, and in an elementary classroom where we watch the varying results of putting the children on different reinforcement schedules. Script written in collaboration with K. C. Montgomery, Department of Psychology, Yale University. Technical advisors on pigeon scenes - Richard J. Herrnstein and William H. Morse, Department of Psychology, Harvard University. (16 minutes, $95).

LEARNING DISCRIMINATIONS AND SKILLS, 16mm, sound, black and white, 16 minutes. McGraw-Hill Films, 1963.

In a detailed analysis of the learning process, this film demonstrates closely integrated processes: Discrimination between stimuli, and application of this discrimination in the making of selected responses. Laboratory experiments with pigeons are shown in the demonstration.

REINFORCEMENT IN LEARNING AND EXTINCTION, 16mm, sound, black and white, 8 minutes. McGraw-Hill Films, 1963.

In this film, it is established that, in general, behavior that is reinforced does not get learned, while non-reinforced behavior is extinguished. This principle is demonstrated in the film with both humans and pigeons.

Supplementary References

1. "Programs '63 - A Guide to Programed Instructional Materials Available to Educators by September, 1963." Washington, U. S. Government Printing Office, 1963, OE-34015-63, 814 pp.

This newest edition, Programs '63, is the first half of a two-part survey of all commercially available programed material. The second part will concern itself with the "Use of Programed Instruction" in schools in the United States. Programs '62 was followed by a similar survey. This survey is listed below.

It will be noted in Programs '63 that it lists all programed materials available to educators by the fall of 1963. Samples catalogued were chosen by the publishers themselves. The editors believe that their primary obligation in Programs '63 was to indicate the number, variety, and source of available programs.

The accompanying statistical chart, Appendix A, demonstrates quite clearly the large increase of programs, and the need for a reference manual such as Programs '63.

2. "The Use of Programed Instruction in U. S. Schools." A report of a survey of the use of programed instruction materials in the public schools of the United States during the year, 1961-62, Washington, U. S. Government Printing Office, 1963, OE-34022, 83 pp.

3. Research and Review Journals:

    a. Excellent journals for research articles are the Automated Teaching Bulletin (no longer printed), Journal of Educational Psychology, Journal of Programed Instruction, and Psychological Reports, and Journal of the Experimental Analysis of Behavior.

    b. Valuable journals for review (i.e., general) articles are: AID (auto-Instructional Devices, now incorporated in National Society for Programed Instruction Journal), Audio-Visual Communication Review, the "Instructional Media" section of Contemporary Psychology, Programed Instruction, and Teaching Aids News Letter.

    c. Miscellaneous research and review sources include other journals, local newsletters, many popular periodicals, and certain Technical Documentary Reports published by the military. For more details concerning this material, contact the Teaching Machine and Programed Learning Project.

4. "1962 Interim Report of the AERA-APA-DAVI Joint Committee on Criteria for Assessing Programed Instructional Material."

The 1962 Interim Report of the Joint Committee on Programed Instruction on Criteria for Assessing Programed Instructional Material was prepared with the cooperation and support of the Educational Media Branch, U. S. Office of Education, under Title VII of the National Defense Education Act. The interim report appears in its entirety in the special issue of Audio-Visual Instruction, February, 1963, on Programed Instruction, pp. 84-89.

This interim report amplifies and extends the previous guidelines published in 1961. The report is addressed primarily to the non-technical reader interested in possible purchase of programs. It summarizes some basic aspects of the nature and current status of programed instruction, and also presents some suggestions and cautions concerning the assessment of programs.

Administration

The administration is charged with the vital role of guiding and unifying the efforts of an educational system in achieving the goal of effective meaningful use of programed instruction. The entire spectrum from selection of materials, through final evaluation, rests in the decisions, assistance, and guidance of the administrator. Particular guidelines are presented:

1. Plan for in-service training workshops or summer institutes for the faculty to fully acquaint them with the medium.
2. Set up an administrative program for the selection and evaluation team.
3. Establish an overall financial plan looking ahead to continuing programed learning.
4. Work cooperatively with machine manufacturers and program producers in identifying your requirements with respect to cost, flexibility, size, weight, maintainability, and sound psychological methodology.
5. Investigate carefully a policy for granting of course or subject matter credit to students successfully completing such a programed course.
6. Expect school building design, curriculum, planning teacher time schedules, grade reporting, and equipment budgets to be affected by use of programed instruction.
7. Work closely with programed learning specialists, subject area specialists, and State Education Department personnel.
8. Consider providing time for your personnel to work with programing once programed learning has established itself in your schools.
9. Visit other locations in your geographical area where programs and devices are being used in your area of interest. Locations of ongoing projects are available from the Bureau of Classroom Communications.
10. Study the provisions of Title III, NDEA in reference to federal financial participation in the cost of programed instruction materials.

Programs and Programing

The preparation of programed material available from commercial sources has taken many hours of patience, work, and revision. In the early stages of programing, publishers and commercial sources have invested considerable funds to produce program material of high quality. The supply of programs is good at this time. Personnel with skills in the art of programing are difficult to find and intensive training is required.

A serious look at the time and expense element in program construction is necessary before a school decides to have a classroom teacher prepare programs. If a school district does wish to investigate and attempt to construct their own programs, the resources of the previously mentioned "team" should be used in the development of short units. The steps to be taken are obvious.

Utilization of the services of the Division of Educational Communications, qualified consultants, and training media are necessary. Many institutes of higher education conduct summer and school year workshops throughout the State of New York. Time, money, skill, and training will all play an important part when a school district plans to have in-service training of personnel, or to experiment with their own program construction of smaller units.

Whether or not school personnel will be involved in actual programing, it is desirable to have this knowledge to evaluate skillfully the many commercial programs now available.

The broad general steps to be taken in the introduction of programing into a school district are as follows:

1. Read as much available literature as possible
2. Utilize qualified consultants
3. Visit educational situations where programed instruction is now in use
4. Obtain sample materials for your own analysis
5. Use the media services furnished by the Division of Educational Communications
6. Conduct in-service workshops
7. Allow trained personnel time to experiment, investigate, and use programed instruction within the framework of your own school district

The more a faculty knows about programed instruction, the better the results will be. In the very near future, formal training in the selection and use of the medium will be a necessity. The trained teacher will be the best asset your district could have. The interaction between these trained personnel with the established evaluation team will be most satisfactory.

Responsibility for Program Selection and Evaluation

The responsibility for program selection and evaluation is the task of a knowledgeable group of educators adequately trained in the special skills necessary to understand the unique nature of programed materials. Though some of the responsibilities will overlap on the local level, a team concept of evaluation is desirable. We have seen these responsibilities managed by different groups of specialists in varied national associations. It is this same pattern of cooperation that we encourage.

Three types of specialists are necessary - the subject area specialist, the curriculum specialist, and the educational communications specialist.

The subject area specialists is responsible for all factors of content, quality control. and authenticity of subject matter presented in a programed format.

The curriculum specialist is responsible for programed instruction in the overall role it plays in the total curriculum. The approaches to be taken and the adaptability of the material in terms of student needs are a prime concern of this specialist. Finally, this specialist needs to determine the methods to be adopted in terms of course units, length of time involved, and any other problems that may present themselves insofar as the curriculum is concerned.

The educational communications specialist has the responsibility for selection and evaluation of material in respect to its audio and visual format. He must have the ability to perform administrative duties necessary to evaluate educational and technical specifications. He is further charged with the logistics of storage, distribution, and dissemination of information and practical use of this medium. This specialist will often assume the duties of total coordination of the efforts of the selection and evaluation team.

By accepting a team concept of selection and evaluation, it is realized how vital this function is to all educators. It means that all concerned with programed instruction must be knowledgeable concerning the art of programing. Selectors and evaluators must have a reasonable knowledge of the basic theory involved. The team concept of these necessary selection and evaluation duties and performance of them will result in an effective functional group producing optimal results.

Selection of Programs Before Classroom Use

With the wide variety of programed materials now available, and the understanding of the responsibilities involved, the selection of materials, prior to their actual use in the classroom is the first duty. Educators have always reviewed materials and the need for careful selection is important. No single program is suitable to all objectives. All available programs in each subject area of concern should be investigated.

Publishers or individual local programers have the responsibility of providing educators with the following information.

1. RESEARCH DATA - Adequate reports of research and testing performed during the construction of the program should be furnished.

2. SUBJECT COVERAGE - The material should be categorized for grade level, semestrial equivalents or in complete units. This should be stated.

3. COPYRIGHT DATA - Data pertinent to publication rights, dates, and location of original publication should be included.

4. CONTENT AUTHORITY - Resource material and content authority information must be listed in accurate concise form.

5. PHYSICAL DATA CHECK - In the check list the following information should be made available:

a. Mode of presentation. Is the mode of a linear, branching, or other type of form.

b. Length of time estimated to complete the program.

c. Costs including accessory equipment and replacement materials.

d. Accompanying manual for administering the program, checking progress, etc.

e. Tests supplied should be described. These descriptions should state whether the tests are diagnostic or achievement type tests.

6. ENRICHMENT MATERIALS - Listing of other suggested materials should accompany the programed materials. Suggestions for implementation of activity with audio-visual media, discussion activities, etc. are most desirable.

7. VALIDATION - The publisher should supply a statement giving results of validation testing. The inclusion of information on conditions of pretesting, procedures followed, and development in terms of revision is necessary and should be available from the supplier.

It is to be emphasized that the preceding information should be available to educators before programs are purchased for classroom use.

Teaching Machines and Programed Tests

At this stage of development in the manufacture of programing devices, rigid standards do not seem to be possible due to the state of flux of the programing medium.

Consequently, statements of characteristics, standards, evaluation, and testing are made in broad generalizations to allow for flexibilities in appraising the individual adaptability of each instructional device to particular needs.

Characteristics

The operating functions of teaching machines are quite variable. Teaching machines characteristics are evident in the method of display on the part of the learner (read-in) and method (read-out) of reinforcement indicated on the teaching device. A representative listing of these displays, "read-in" and "read-out" descriptions is given to indicate the wide range of variables used.

DISPLAYS - Printed Sheets
Printed Roller Sheets
Printed Cards
35mm Slides
Filmstrips
Microfilm
8/16mm Motion Picture Film
Magnetic Tape (Audio)
Television (Audio-Video)

LEARNER RESPONSES - Multiple choice button
Write complete answer
Fill-in missing word or letter
Type answer
Pull tabs
Marking with special ink
Erase overlays
Plug electric probe into contact
Talk into microphone
Think response

INDICATION OF CORRECT RESPONSES - Colored lights
New question appears
Electric typewriter types reply
Comparison of learner answer with correct answer
Visual display on machines tells learner of correct answer
Audio recording stating that response is correct

Educational Standards

The publication of the United States Office of Education Policy Bulletin III-12, relating to federal financial participation in cost of programed materials (June 12, 1963) broadly defines the standards we accept below in the field of programed instruction.

Programed learning materials generally refer to those self-instructional materials which have clearly defined outcomes toward which a student proceeds at his own rate. These materials shall employ a pre-arranged sequence of material presented to the student in small step increments, require the student to respond actively at least once for each step increment of material by composition for selection of a response, and provide prompt confirmation and/or correction for each response a student makes. Check the following five criteria during the selection of a teaching device:

1. Self-Instruction - Is the major portion of the instruction provided by programed learning materials without the presence of human instruction?

2. Self-Pacing - Does learning occur at learner's rate?

3. Feedback-Reinforcement - Does learner receive prompt confirmation or knowledge of his progress?

4. Active Participation - Is there interaction between machine, program, and learner?

5. Content and Method - Is the subject matter sequence carefully controlled and consistent?

These points will be further described in the next section.

Program and Frame Evaluation

1. Do specific frames relate to general aims and specific objectives of program?

2. Are objectives set in meaningful, measurable, behavioral terms?

3. Is content up-to-date?

4. Is frame too difficult for comprehension?

5. Are responses adequate, eliciting desired behavior?

6. Is there logical sequencing between frames?

7. Is program efficient and effective in regard to:

   a. Time expended
   b. Relationship to other media used
   c. Meeting needs of individual students
   d. Compatibility with other classroom activities
   e. Compatibility with teacher objectives

8. Is the program correctly presented in use of:

   a. Terminology
   b. Correct form and/or spelling

9. Are individual frames of the program correctly composed to elicit responses not of a "copy-frame" nature?

Technical Standards - Programed Text

The following recommendations are general in nature. Some of these standards are dual in nature. They may apply to a teaching machine. When selecting a well designed program for unit of study or an entire course, consideration should be given to the following.

1. ASSEMBLY - A programed text should be adequately bound in such a manner as to allow for re-use of program material. Covers of programed texts should be of durable material. Slide

or masking devices in vertical format texts should be an integral part of the bound unit.

2. EXPENDABLE MATERIAL - Considerable thought should be given to purchase of programed materials requiring disposable answer units. Specially prepared answer attachments or printed material may not be necessary.

3. SIZE AND SHAPE - All material should be of a form convenient for student use and manipulation. Consideration should be given to the desk and working area where material is to be used.

Technical Standards - Teaching Machines

Teaching machines come in various shapes, forms, and sizes.[1] It is not our intention to indicate which machine is best. Whatever machine is selected, the standards below which supplement our previous recommendations for the programed text, are most important. The application of this information to planning under Title III, NDEA, as mentioned previously is encouraged.

1. GUARANTEE - Unconditional guarantees of at least one year should be supplied on all mechanical, electro-mechanical, (battery or AC/DC), electro-optical electro-aural devices, and combinations of these.

2. CONSTRUCTION - Durability of material used in the construction of a device is important. Devices should be constructed of a durable plastic or metal material. When a cardboard device is used as a teaching machine, its construction should warrant its use for more than a one year period. All machines of an electrical nature must be safe, preferably carrying an Underwriters Laboratory approval seal.

3. INSTALLATION - In addition to the necessities of the programed text previously considered, the classroom space to be used must contain adequate electrical power supply where needed.

4. STORAGE - Storage facilities must be available in cases where teaching machines are not permanently affixed to furniture in the location of use. This storage space should also be used for any type of visual or audio units to be used as an integral part of the program presentation.

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[1] In this classification, it is our intention to analyze the teaching machine itself. Scoring devices, self-scoring devices, and ready-review devices are not to be construed as teaching machines, though these features may be acceptable when included as an integral part of a device which meets the criteria involved.

Testing Programs Before Classroom Use

In some cases, publishers may not have supplied complete physical validation or testing data. A decision has to be made about particular programs. This is a task to be assigned to personnel directly responsible for actual use of the material. Though the following suggestions are going to take time in the school day, they are most important. You want programs that will do the most good for students. They will help to make the most of classroom time later on by selecting a program that will be of value in this final election activity.

1. Select no more than three typical students. Obtain information on their IQ, reading ability, school achievement, etc.

2. Administer a pre-test and diagnostic test to each of the three selected students before beginning the program.

3. Administer the program unit. Remain with the students during all phases of pre-testing, diagnostic testing, the program and post-test.

4. Administer the post-test. Use some form of short anecdotal record to make notes on student comments on all four phases no matter how irrelevant they may be. This procedure will enable you to select a program that is satisfactory, inform you of its content, and any difficulties that may arise during the eventual class usage of the program.

After the necessary steps listed above have been taken, then the program is ready to use with a class.

Utilization in the Classroom

The utilization of programed material is comparable to that of any other communication media. Attention on the part of the teacher should be given to preparatory steps, principles of use, and follow-up activities. The selection and evaluation team has completed their work. Preparatory step and cautions are to be noted.

Before Using the Program

1. MISSING SKILLS - Any skills necessary for adequate response or performance must have been taught before the program is introduced. Reading ability level is most important.

2. GRADING - The method of progress grading and terminal grading should be explained to students. They must understand they are not being tested when they work on a program.

3. PHYSICAL FACILITIES - a. Sufficient copies of programs should be available. Programs should not be shared by students concurrently.

   b. Access to sequence units should be available upon completion of preceding units.

   c. Teaching devices necessary should be located in areas of concentrated use.

   d. Use of other media (films, slides, etc.) should be provided for as necessary.

   e. Adequate provisions will be necessary for storage of devices and programs and expendable material used for these programs as presentation display material or answer sheets.

4. EXPLANATION - The function of a particular device or textbook technique format should be explained to a student, i.e. its operation, first echelon maintenance, etc.

5. OTHER TEACHERS - It might be desirable to involve other sympathetic teachers in the field to this field.

6. PLANNING - More thorough unit planning and effective scheduling of horizontal enrichment activities will be necessary.

7. PREPARATION - Two factors are most important. (1) The in-service training of the teacher and (2) time spent on the actual programs being used orienting the educator to the most efficient use of the programing medium.

8. CONSULTATION - The teacher should consult with the selection and evaluation team to plan classroom activities.

Using the Program

Preparation has been made at this point for using the program in the classroom. There are some principles of use to follow at this time which represent observations and judgements reached in the Title VII, NDEA project, "Research to Discover Methods of Applying and Testing Machine Principles of Programing, Basic College Courses in Mathematics and English Composition for Presentation over Closed-Circuit Television."

1. Minimum space requirements should be established for each student.

2. Minimum acceptable scores on post tests must be obtained before progression to another unit is allowed.

3. Student interaction between each other will not be increased in a programing situation during time they are actually working on programs.

4. Fewer questions are going to be asked during the exposure period to programed instruction.

5. More time is going to be spent with individuals or small groups when using programed instruction than was possible with conventional instruction.

After Using the Program

At this stage of use, some important steps are to be considered. Now a final analysis will be made of all preceding activities recommended.

1. POST-TESTING - A test of a terminal nature should be constructed and administered. Care should be taken to see that frame items are not directly used as questions in the test.

2. GRADING - A system of grading should be established and fully explained. Regular report cards may be used. If a percentage of items completed is used as a scale, and reported, the total number of items completed should be noted in comparison with the total number of items in the unit assigned. This method can be used in testing as well as in grading progress through a programed unit.

3. FEEDBACK - The entire team concept of evaluation must demand a feedback to individual members of that team. All of the team's effort is culminated in this final report. Questions on the useful contribution of the program, effectiveness of the medium, location of the medium as a self-instructional or group instructional tool can be resolved.

4. PLANNING - The future of the program should be evaluated by applying methods previously described. The types of programs may determine which units will be assigned as homework material, filed as library reference work, or serve as reorientation of classroom activities.

Conclusion

The future of programed instruction is most promising. Imagination, resourcefulness, and adequate training in the use of this medium will result in positive benefits to all concerned. Use programed instruction. Try programed instruction in your classrooms. Ask for guidance, consultants, materials, and research.

MISCELLANEOUS

SELF-INSTRUCTION IN THE OPERATION OF AUDIOVISUAL EQUIPMENT

Newton A. Allen for Gerald Mars, Syracuse University

It has been the policy of many teacher training institutions to employ over the years a segment of audiovisual instruction in one of the teaching methods courses. Most often this segment is concerned with the learning of audiovisual equipment operation.

In a recent paper by Torkelson, he reviews several studies which indicate that; (1) beginning teachers should be fully prepared to use audiovisual materials when they leave college; (2) teachers with audiovisual training made about twice as much usage, percentage-wise of these media, as those with no training, and (3) proficiency and use of physical facilities regarding audiovisual materials should be one of the criteria for accreditation by the National Council for the Accreditation of Teacher Education.[1] Additional research from Pennsylvania State University indicated that...

> given specially prepared materials, equipment and proper facilities, pre-service teachers can learn equipment operation without the benefit of an instructor...[2]

In view of the existing research, the Teacher Preparation Committee of the School of Education at Syracuse University, on April 29, 1960, strongly recommended to the Dean and faculty that all graduates of the School of Education indicate by performance, a competency in the operation and application of audiovisual devices.[3]

Because it would be virtually impossible for each student from the School of Education to receive individual instruction, it was decided to devise a self-instruction program in equipment operation. This task was given to Mr. W. J. Mars, Media Associate for Project 1 of the Inter-University Project in teacher preparation.

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[1] Torkelson, G. M., "Implications of Research in Newer Education Media for the Role of the Teacher and for Teacher Education." Newer Educational Media, the Pennsylvania State University, 1961, 67-85.

[2] Reeves, J. M., and Torkelson, G. M., "Self Instruction in Audiovisual Education: A Title Program Report, Audio Visual Communication Review, Vol. 8, No. 4, 1960, 202-206.

[3] Mars, W. J., "Self-Instruction Program in the Operation of Educational Media," p. 1. (files of the Center for Instructional Communications, Syracuse University, 1962).

Mr. Mars and his assistants assumed the responsibility for writing the self-instruction program. During the spring semester of 1962, the program in equipment operation came into use at Syracuse University. One year later, after serving as pilot program for Project 1, the laboratory facilities were turned over to the Center for Instructional Communications at the University and placed in the hands of the director, Dr. Donald P. Ely.

Since its conception, the program has been revised many times in order to better serve the needs of the pre-service teacher. Many suggestions and recommendations from the students are accepted, evaluated and incorporated into the existing program. Presently, the program is far from perfect, but it is serving the purpose for which it was designed.

There are four student stations for self-instruction. Each station is equipped with a manual of instructions, a tape recorder, slide and filmstrip projector, a 16mm motion picture projector and associated instructional materials. There is an additional station at which is located an overhead projector and an opaque projector. There is also office space for the graduate assistant who supervises the laboratory. The assistant schedules the use of the laboratory facilities, keeps a constant check on the equipment and revises the program.

The program is broken into four phases, each approximately 45 minutes in length. The students are scheduled for one hour each week for five consecutive weeks. The fifth session is an evaluation session, during which the student demonstrates by performance his capability to operate the equipment.

The first phase of the program is the tape recorder. Each student is provided with a series of photographs and type written instructions. The student proceeds to make a recording, play back the recording and erase it, using a practice tape. Time is allowed for additional practice if necessary.

Using the prior knowledge in the operation of the tape recorder, the student advances to phase two. By listening to a pre-recorded "Instruction" tape, the student gains information on the set-up and operation of the slide projector. A slide series is then used in conjunction with the tape to teach the set-up and operation of the filmstrip projector.

Phase three is the set-up and operation of the 16mm motion picture projector. At present, there are two programs available, each for a different projector. The first program uses a slide series with a type written text. As one projects the slide, the instructions are read and the task completed. This operation is broken down into twenty-one individual steps. The other program uses a filmstrip produced by the University and a pre-recorded tape. The student listens to the tape and watches the filmstrip as he performs the steps in sequence. The filmstrip has fifty-two frames.

The fourth phase, the overhead and opaque projectors, is accomplished by means of type written instructions only. The primary intent in having the student work with this equipment is to expose them to additional instructional devices.

There is no attempt at present to expose the student to any of the techniques in preparation of materials for these projectors. They are, however, told of the many uses which each projector has and are encouraged to learn the techniques involved.

With full time supervision, the self-instruction laboratory is capable of serving 320 students each semester. At present, the laboratory is operating at approximately half of its potential, with plans in the next few semesters to increase considerably.

Are we satisfied with our self-instruction facilities? No. Additional programs are being written to include different projectors. Present programs are being revised and rewritten to make each step a bit clearer to the student Present programs are being rewritten to include various new modifications in the equipment. New stations are being designed to allow the student more working space and privacy. We are moving closer to an automated program.

Is our program effective? Do we fulfill our objectives? Are the students learning the operation of audiovisual equipment? We think so. Perhaps a recent student can best answer that question when she spurted out at the completion of the program, "Gee, I'm so un-mechanical, but this stuff is easy to operate when you know how. Maybe now I'll even take sewing lessons." I expect her to come into the office any day now asking for our self-instruction program in dress making. We haven't gone that far...yet.

HIGH SCHOOL INSTRUCTIONAL MATERIALS CENTER

John Battram, White Plains

I. Library

- A. Materials for curriculum and leisure use
  - 1. Books - about 16,000 for circulation and reference
  - 2. Magazines - about 100 titles, back files of most for five years
  - 3. Pamphlet and clipping files
  - 4. Career room - books and pamphlets on vocational guidance and individual careers, books on colleges and individual college catalogs
  - 5. Newspapers - New York Times, New York Herald Tribune, Reporter Dispatch and representative newspapers of U.S.

- B. Services
  - 1. For Students
    - a. Orientation lessons in use of library
    - b. Individual reading guidance
    - c. Free reserve system
    - d. Displays
    - e. Place to work before and after school
    - f. Listening and viewing area for school owned audio-visual material
  - 2. For Faculty
    - a. Reserve shelves
    - b. Class visits
    - c. Classroom collections
    - d. Curriculum coordination
      - (1) book selection
      - (2) book lists
      - (3) special bibliographies
      - (4) consultation with individual teachers
    - e. Liaison with public library
    - f. Inter-library loan
    - g. Information for book ordering
    - h. Display space

II. Instructional Materials Center

- A. Curriculum Materials
  - 1. Filmstrips and slides
  - 2. Recordings, disc and tape
  - 3. Realia
  - 4. Professional Library
    - a. Books
    - b. Pamphlet file

- c. Research reports
- d. Professional magazines
  - (1) current collection
  - (2) storage of back issues
- e. Education Index and materials lists
- f. Curriculum guides
- g. Courses of study
- h. Textbooks
- i. Programed texts

5. Flat pictures
6. Transparencies

B. Curriculum Services

1. Film service - ordering, scheduling, projecting
2. Recording service
   - a. Tape and discs
   - b. Duplicating and editing, splicing and erasing
3. Community resources
   Source listings of:
   - a. Field trip data
   - b. People with special talents, experiences, and interests
   - c. Libraries
   - d. Other community resources or activities
4. Equipment
   - a. Purchase consultation
   - b. Projectors, 16mm, slide-filmstrip, opaque, overhead
   - c. Audio-tape recorders, phonographs, P.A.
   - d. Expendable materials for above equipment
5. Exhibits of new materials, books, devices, etc.
6. Programed lessons in slide rule and spelling (more to arrive)
7. Graphics
   - a. Lettering device and prepared letters
   - b. Bulletin board materials
   - c. Displays
   - d. Dry mounting (with assistance)
   - e. Feltboards and materials
   - f. Models
   - g. Color lift
8. Production Service
   - a. Overhead transparencies
     - (1) diazo and photocopy
     - (2) hand preparation
   - b. Slides (2"x2")
   - c. Photographs (teaching, bulletin boards, display, etc.)
   - d. Duplication equipment - stencil scanner for mimeo preparation

9. In-service growth (meetings, workshops, consultations)
    a. Leadership in all areas of educational media, including overhead, E.T.V., programed learning, equipment use and operation, etc.
    b. Classroom visits by Coordinator when requested
10. Facilities for research, planning and preparation
    a. Carrells, work tables
    b. Materials storage
    c. Preview and preaudit facilities
    d. Work areas (production of materials)
    e. Typewriter for teachers use
    f. Repair facilities for equipment
11. Newsletter - new services, materials, techniques, previews
12. Correlation of materials with school curriculum
    a. Departmental listings
    b. Cross-media listings
    c. Special listings

NEW YORK CITY'S AUDIOVISUAL DEVELOPMENT AND APPRAISAL CENTER

Edward Bernard, New York City Board of Education

The Audiovisual Development and Appraisal Center, generally known in the New York City school system as AVDAC, was officially authorized in 1961 as a unit of the Bureau of Audiovisual Instruction. AVDAC conducts appraisals and adaptation or design projects in the field of the newer instructional media with stress on applications, methods and organization. Although the Bureau of Audiovisual Instruction annually conducts thousands of routine committee evaluations of films, tapes, equipment items and other devices, the procedures required for dealing with major innovations such as programed instruction and language laboratories are now complex and time-consuming. The rapidly growing amount and specialized nature of this work in a very large school system such as New York have made it necessary to have a specialized staff unit to deal with appraisal, adaptation and improvement of such new teaching and learning resources.

The unique characteristic of AVDAC is its emphasis on exploration and development of valuable applications, rather than on limited formal evaluations of specific resource or utilization designs.

The Center is currently housed in P.S. 33, Manhattan, an elementary school equipped with diversified closed circuit television facilities and a mobile language laboratory.

The present organization of the Center embraces four departments: Engineering and Special Projects, Closed Circuit Television, Programed Instruction and Language Laboratories. The Engineering and Special Projects group includes two teachers, two technicians and a secretary, with the coordinator serving as administrator of the Center. Accordingly Engineering not only carries out its own group of projects but operates the technical facilities and services for the other AVDAC departments. Currently, there are five major projects in Engineering dealing with applications of simultaneous translation equipment, appraisal of teaching machines, classroom film use by CCTV rather than projectors, development of a portable Kine recorder, and 8mm equipment and film studies.

The CCTV unit is staffed by a teacher who serves as a production specialist, together with some personnel time in cooperating schools. The most important project in this field is an exploration of applications of portable CCTV rigs in training teachers and supervisors. The rigs are being used for observation and discussion of ongoing regular classroom lessons.

The language laboratory work of the Center is conducted by a high school department chairman, a teacher, a multi-lingual typist and occasional linguistic tape production specialists. In addition to development of special auditory comprehension tapes related to the New York State Regents requirements, this unit of AVDAC is investigating high school uses of language laboratories for independent study. Another interesting aspect of the New York City labs program is the current work with built-in and mobile labs in six elementary schools, embracing not only foreign language applications, but also those in elementary mathematics and in teaching English as a second language.

Considerable emphasis is being placed at AVDAC on programed instruction. To solve the problem presented by the frequent enrollments of individual non-English speaking pupils during the school year, self-instruction materials to provide initial orientation and language skills have been developed and are being tested. A series of programs developed for self-instruction in operation of audiovisual equipment is described in Dr. Morris Freedman's speech to another section of this Convocation.

A number of reports of previously completed studies are still available through AVDAC, 281 Ninth Avenue, New York 1, New York. These include: CCTV, The Story of the Chelsea Clased Circuit Television Project, a four year study conducted under a grant in aid from the Fund for the Advancement of Education; Foreign Language Laboratories in Secondary Schools, a four year study conducted with a grant from the New York State Education Department; and Programed Audiovisual Materials Evaluation, a committee report dealing with appraisal procedures and problems related to this type of resource.

CULTURAL ENRICHMENT PROJECT (CUE)

Robert Brown, State Education Department
Grace Lacy, State Education Department

PROJECT CUE is the result of many influences at work in our society today.

First, there is fear that perhaps there has been so much emphasis on the sciences that other aspects of education are neglected. President Kennedy said recently, "Art is the great unifying experience. We know that science is indispensible but we also know that if science is divorced from a knowledge of man and man's ways, it can stunt a civilization and so the educated man and very often the man who has the best scientific education reacher out for the experiences that the arts alone can provide."

Second, there is a general concern about the development of creativity for we cannot know the problems the future will bring. But we do know that creative thinking will be needed to solve them.

Third, there is concern for moral and spiritual values since headlines often shock us with the apparent lack of these values in our youth.

Fourth, there is the peril of leisure as sutomation helps leisure grow faster than our capacity to use it wisely. Dr. James Charlesworth, Professor of Political Science at the University of Pennsylvania, said last week, "Leisure activities both mental and physical should be compulsory and should be taught all through the period of school attendance with heavy emphasis on activities that evoke pride of doing, togetherness, human understanding, creativeness and development of mind and spirit. Games and sports are fine, but they represent the elementary level of leisurely thinking."

Fifth, there is the necessity for understanding other peoples and other cultures because it is dangerous for cultures not to be able to communicate. Modern technology has so shrunken the world that no one can any longer afford to live in his own little world. He must grow to understand and appreciate all of the other cultural worlds in order to take his place as a true world citizen.

These forces and cilmate of thought have led the U. S. Office of Education to grant $82,500 and the National Gallery to donate thousands more in materials to the New York State Department of Education for an experiment which would integrate the arts into the existing New York State Curriculum at the 9th grade level in the areas of English, Social Studies, Science, Homemaking, and Industrial Arts. The program is called Project CUE--which stands for culture, understanding and enrichment.

The 9th grade level was chosen because this is the last year of compulsive education. After this level there are many dropouts who may never receive instruction in the arts unless they receive it prior to leaving school. With the assistance of the curriculum people, 13 schools were invited to participate in the experiment. These schools are distributed over all the state and are of various types and social economic levels.

Next, the superintendents, project coordinators, and audiovisual personnel from each school attended an all day meeting in Albany where they were briefed on the aims and methods of the project.

The working plans for the project are as follows. Our line of communication with each school is through the project coordinator who relays or collects information from the head teachers who in turn collect from or give information about the project to the other teachers of the same subjects in the school. In this way we have a means of getting information to and feedback, including evaluation, from each teacher.

The method of integrating the arts material was through the use of packages of material and a curriculum guide containing the methodology for using the media and materials effectively. The reason for this choice was based on the fact that to successfully integrate the arts with the regular subject matter requires a wide knowledge of both the subject matter and the arts. Few teachers have either the background or the time for such integration. Therefore, the media, materials, and methodology would supply the know how and expertise.

The curriculum for each subject was carefully studied. Subject matter specialists were asked to give lists of aims for the project in their area. Textbooks used in the courses were studied. Courses of study were visualized by placing the topics on white cards and arranging them on bulletin boards. Areas where the arts might be related were noted on a pink card. For instance, in science the study of the human body included the study of the senses. This in turn led to perception which leads to the artist's way of seeing which helps us to see things in a new and different light than before. The study of color leads, of course, to color in painting. Chemistry leads to the chemistry of painting, the various pigments binders, techniques and the effects they give. Sound leads to music. Geology leads to appreciation of gemstones and sculpture, paleontology, and archeology.

After following this line of reasoning with all the subjects, a long list of possible materials seemed apparent. Then began the hunt for films, filmstrips, tapes, recordings, flat pictures, or any other kind of visual or audio material which would fit the topics chosen. Hundreds of materials of all types were inspected and previewed. Reviews of the most desirable of these were written for the use of the consultants.

The subject matter consultants were teachers from the project schools with a special background in one of the five areas. They came to Albany for five weeks during the summer to preview, evaluate, and select materials and to write the curriculum guides. Materials were chosen on the basis of their relation to the subject matter and also according to certain arts criteria. The arts were defined as being music, poetry, painting, architecture, the dance, cinematography, photography, literature, nature appreciation, graphic arts, and so on. A format for the guide was then agreed upon. This guide was to assist the teacher in using the materials.

Then came the job of selling the project to the teachers in the field as teachers are at the heart of subject matter change. The point was to get busy teachers who already feel overburdened to try something more and something new. The following is the presentation as given to the teachers.

INTRODUCTION

We hear a great deal these days about the cultural activities of national figures--Mrs. Kennedy redoing the White House, Governor Rockefeller's collection of art, and Life and Time's listing of symphonic programs, operas, gallery showings, and dramas. However, a recent article in the *Saturday Evening Post* labels the cultural explosion a phony. The statistics look good, but the culture is just not seeping down to the man on the street. It still remains the characteristic of the elite few. At a recent lecture at Harvard, Herbert Read said this about the arts in American Secondary Education:

> "Although the value of the arts is widely recognized today in our schools, the teaching of them is underdeveloped and poorly organized by comparison with other subjects. They are often pushed aside by other pressures. Educators and philosophers are now beginning to think that our education has been too verbal, too intellectual, too practical. For an adequately balanced diversified program in general education, we need more emphasis on the esthetic and creative side. We need to make more effort to develop students powers of *sense perception*, *imagination*, and *emotional sensitivity*. The visual arts as well as literature and music can play an extremely valuable part in general education. To develop the ability to perform and to express one self in various art media is just as important as engaging in literary composition. But art alone is not enough. To have a broader and deeper value the arts must be linked up with the understanding of important cultural meanings, critical insight, and developed powers of imagination. Since the arts have so much to offer, why is it that they have been so neglected in our schools? In the depression there was little money for the teaching of them, college requirements overlook them, and they are pushed aside because of the emphasis on the sciences and math. We do a fair job of teaching them in the elementary school, but they are sadly neglected at the secondary level expect for courses for interested or talented youngsters."

August Hoecksher, Cultural Consultant to the President, reported that the arts in America were sadly neglected. At the Cubberly Conference on National Goals and Secondary Education, Robert Bush of Stanford University said:

> "The arts, if the advice in the Heckscher Report is followed, will come into their rightful place at the heart of the school, as befits a society that claims to place high value on the esthetic, spiritual, and other non material factors of life. If we are serious in our intent that attention should turn to qualitative considerations and to high intellectual standards and to filling the gaps in liberal education, this neglect of the arts must cease."

Again from the Harvard Burton lectures some advice about the arts from Sir Herbert Read:

> "Just buying paintings or art materials, and offering courses unrelated to the rest of the curriculum will not remedy the situation at the secondary level. To be effective courses in arts must be more thoroughly incorporated into the curriculum. As departmentalization at the junior and senior high school increases, it becomes difficult or impossible to arrange for students to visit art museums, concert halls, or theaters. The answer to this is to bring the arts into the school. Another problem is that each art, if taught at all, is taught separately and the student is not shown the many important connections and interrelationships of history, religion, science, and the other arts."

WHAT IS PROJECT CUE?

Project CUE is an experiment which is trying to find a way to bring more of the arts to every student and to integrate them with other subject matter areas so that the student may see the interrelationships of all the disciplines and come to the fullest possible awareness of the arts linked with understandings of important cultural meanings, critical insights, and powers of appreciation.

HOW DOES IT PLAN TO OPERATE?

It proposes to bring about this integration into the curriculum through the use of newer media and materials. This integration is a difficult job and requires specialized knowledge of both the subject matter and the arts. Few teachers have wide backgrounds in every field and practically none of them have enough time to spend hours on intense planning for such subject integration. Project CUE aims to overcome these problems through the use of:

Media - which bring expertise and the results of perhaps weeks or years of intense research to the teacher

Methodology - a Curriculum Guide which is the result of intense, careful preplanning for best use of the media and materials

Materials - packages of AV materials which can help make communications, the heart of all teaching, more vivid, compelling, and complete--student experiences such as the television program "Cultures and Continents"

WHY SHOULD YOU ENGAGE IN PROJECT CUE?

The project is an experiment to find out the best media, materials, and methodology for integrating the arts. You may well ask why the U. S. Office of Education and the New York State Education Department attach so much importance to the arts, and why they are involving you in the experiment. There are many good reasons, but I will present here only the most cogent which are those involved in achieving the main aims of education, the balanced growth and health of the personality and the selective transmission of world culture.

1. The Arts Contribute to Personality Development

All societies must find some way of civilizing constantly advancing hordes of barbarians, their own children. The arts can help desirable personality maturing and development, including the ability to make successful interpersonal adjustments through enriching experiences they can be led toward high ideals, healthful thinking, developing perceptual functions, the ability to respond sympathetically to emotive symbols, and the ability to express and communicate in various media. Simple instilling facts, figures, and content which is soon forgotten will not do this job. It is the humanities which lend themselves to the real job of education--the building of attitudes which last throughout life. For unless we do build desirable attitudes, our education can be a boomerang and knowledge gained may be used undesirably. Children must learn desirable goals in life as well as techniques and facts and skills.

The arts are a major part of the world's cultural heritage. An acquaintance with the arts is indispensible for an understanding of world civilization and ourselves as its inheritors. A partial knowledge of American and English literature and a few classic texts is far from sufficient ground work for understanding today's wide world. The arts provide vivid illustrations of how people in different times and places lived and thought, how they aspired through religion and ethics toward a better way of life, and how their standards and values changed. There are few better ways to help a student see the values and the disvalues of different ways of living than to help him appreciate poems, novels, plays, and the art of the present and the past of both the West and the East. In the past our curriculum completely neglected eastern culture. But today educators realize such studies and appreciations can help develop insight into how to get along with the millions of world neighbors.

The arts are infinitely educative but not self-explanatory, especially contemporary, experimental, and exotic art. Such art requires explanation to convey its message. The teacher might not understand abstract expressionism, but a film or filmstrip can bring expertise and this understanding to her class. The teacher need not feel incompetent or ashamed if she does not know all these things.

The total content of world civilization is growing at a breath-taking rate. Archeology, Anthropology, advances in transportation, and communication technological devices have suddenly put the entire world on our educational horizon. The teacher just cannot keep up with it all. Through the use of media which involves a great deal of research, the expert can be brought to the classroom to help students perceive meaningfully.

2. The Arts Can Aid in the Development of World Citizenship

The proper selective study of world art can help students to become genuinely world-minded rather than provincial. This can have a beneficial effect not only on their personal lives but upon the ability of the entire nation to fill the role of leadership in the democratic world. You know how important it is for international relations in having this country represented abroad by people who have some understanding of the culture, including the arts, of the countries to which we send them. Yet, I have personally witnessed the sad example of people in important posts in the Orient who do not have the slightest idea of the cultural background of the people with whom they are dealing. Probably you have read about these "Ugly Americans."

There are still some people who think that art is pure emotions or pleasures, or a frill. Today educators and statesmen are coming to realize the importance of the role that art plays in the development of the intellect. Harold Taylor in his insightful book "Art and the Intellect" states the case very forcefully:

> "I wish to present the view that teaching people to think is not merely training their intellects through the study of organized bodies of fact. This may very well teach them not to think but to memorize and accept what they are given since all the work has been done for them and there is really nothing left to think about. The main problem is to teach people not only to think but to think for themselves and to organize their own bodies knowledge and experience. The intellect is not a separate faculty. It is an activity of the whole organism, an activity which begins in the senses with direct experience of facts, even thoughts and ideas and it involves the emotions. The activity of thinking begins when an individual is impelled to think by the presence of questions which require answers for him. He begins thinking when he is involved in experiences which require him to place these in some kind of order. Until the individual becomes sensitive to experience and to ideas, until they mean something to him personally, or to put it differently, until he becomes conscious of the world around him and wishes to understand it, he is not able to think creatively either about himself or about his world. His sensibilities, his values, his attitudes are the keys to his intellect. It is for this reason that the arts, since they have most directly to do with the development of sensibility, are an essential component of all learning, including scientific learning."

No one will argue the fact that the world has enormous problems today. These problems cannot be solved in the old ways. We are in dire need of creative solutions to them. The arts, especially in the practice of them, can stimulate creative thinking. Even the appreciation of the arts leads us to new ways of thinking, of perceiving, of seeing, as well as in the education of the emotions, an important part of personal development.

3. The Arts Can Aid in the Development of Moral and Spiritual Values

All of us have been exhorted over and over again to inspire and develop moral and spiritual values in the young. Commissioner Allen has stated that since the Supreme Court decision it is through the arts and humanities that such values can be developed. Dr. Harold Howe, Superintendent of Scarsdale Schools, said in a recent "Saturday Review" article that American school efforts to teach these values through special courses in citizenship or history accomplish little or nothing. He feels that the humanities if properly taught can accomplish much more in this area. Great literature offers solutions and ways of thinking about the moral and emotional problems which beset adolescents and for which neither family, church, or school offer very effective guidance. Students can, through the right kind of reading and discussion, experience a variety of emotions and examine a highly personal way, motives, values, and attitudes which their years have not allowed them to have personally. The arts help the adolescent down the path of human experience so that he can understand who he is, where he is, and why he has certain values so that he becomes more than just a bundle of reflexes responding only to today's superficial stimuli of the twist, drag racing, paperbacks, drugstore erotica, and pop singers.

4. The Arts Can Educate for Worthy Use of Leisure

For the first time in history, we are confronted with a new problem of how to educate a whole people for the wise use of leisure. Heretofore, only the elite had leisure. There were so few of them that even if they did not use leisure wisely the effect on society was not too great. Today's technology will be filling the leisure market with hordes of primitive intelligences. We have seen too often in the headlines how some of this leisure is used. It is not only the adolescent on the wrong side of the tracks who uses leisure but the over-privileged student as well as was evidenced by the wanton destruction at the Wansmaker debut. Through the arts we can reach these impressionable young minds on some level so that more desirable avenues of enjoyment and exploration are opened to them.

Science is wonderful in solving some problems, but it also creates others. The same technology which has brought so much good to us has divorced man from the soul-satisfying aspect of taking raw materials and making a finished product of them. It has divorced labor from the end product so that we have now on the one hand complex dehumanized almost completely automatic machines and on the other hand the individual whose labors are only minutely related to it. This makes for an uneasy and displaced society alienated from nature. It is in the arts that man must turn in order to face leisure without dread. We cannot wait until the leisure time arrives. We have to provide an understanding and an appreciation of the arts while students are in school. We cannot trust to chance or individual interest that they will develop it unaided.

5. Art is a Way of Seeing--It Develops Powers of Perception

Although man has increasingly sought technological extensions of his senses through the microscope, radar, telescope, and other devices, he has neglected the training of the senses themselves. Here again the arts provide this new way of seeing and experiencing. They can teach us to see, instead of merely looking; to hear instead of merely experiencing; to feel and experience deeply; and to live richly and fully. In addition, the arts incarnate the freedom of a society for the artist helps us to this new way of seeing which we might not have achieved on our own. They can inspire and stimulate fresh new approaches to problems. How the arts incarnate freedom is only too aptly shown by contrasting Soviet art with our own because what a society values is depicted in its arts. Our artists are free to say what they wish, to criticize, to point the finger of scorn, to tread new paths, to experiment, and to explore. The Soviet artist is free only to glorify the state, the status quo.

Project CUE is attempting to bring as much of the world of arts as it can to your school. It realizes that time is short, that the teacher's duties are many, that pressures are great. It hopes to save teacher time by bringing the arts to the school through the vivid compelling educational communications media and materials which can reach all of a child's senses for more complete communication and appreciation. Secondly, it hopes to save teacher time and effort by providing a Curriculum Guide which incorporates intense careful planning for use of these media and materials. Although planned to save the teacher time and effort, the guide is in no way restrictive but is regarded as a springboard for the teacher's creativity.

The media and materials were chosen and the guide written by teacher consultants who worked intensively on it for five weeks last summer in Albany. Their efforts were edited and approved by the subject matter specialists and the Bureau of Secondary Curriculum. The materials are being assembled and packaged by the Division of Educational Communications and will be in the schools soon. At this stage, the guide is simply a working paper and the material and selections are tentative. The arts' materials are not just tacked on but are closely tied in with core curriculum material. The curriculum and its aims were closely studied and the material carefully integrated.

At this point the Project CUE teachers will execute the most important part of the experience--evaluation of the media and guides. The project staff are most anxious to have constructive suggestions concerning the media, materials, and methodology. Although they worked very hard, the consultants simply did not have time to screen all possible material this summer. You may know of some better choices. You also will know how best to utilize the media with your particular students. We hope that you will give us the benefit of your experiences and creativity so that we can upgrade the entire effort if necessary, so that by the year's end we can have a package of outstanding materials. Many groups are now wishing to integrate the arts and are watching this pilot project with interest for guidance in their own efforts.

We are not asking you to be entirely altruistic. You, in turn, may receive new insights from the viewing and teaching of this material which is now available to you. Teachers wishing to preview other materials in their field will receive our fullest cooperation in securing materials for them. (The evaluations and suggestions you provide can do much for other teachers not so fortunate in training or in having all the cultural resources of New York City at their back door). Of course, I know the thing that is in each of your minds and that is time--where is the time to do all this? Remember we have tried to save you time by bringing to you media which incorporates weeks of effort, expertise, and research which does much of the job for you and by employing intensive preplanning in the guide. Too, you may be thinking what do the arts do for my subject field? As Dr. Howe pointed out, possibly you will be accomplishing more by devoting some time to the arts. The arts can intensify core content. In addition, even in the area of science, people are beginning to find out that much value can be learned through seeing and understanding the interrelationships between various subject fields. In addition to teaching about the arts, Project CUE may bring unexpected dividends in the development of student intellect, personality, and interests. We hope it can awaken creativity or at least an appreciation of creativity. The arts may bring about better world understandings along with an interest in absorbing and adding to what is great and good in our civilization.

Hopefully, they can bring personality development, ability to enjoy life wisely, and understanding of others in order to appreciate other cultures. This makes it possible to get along and deal with world neighbors and maintain our position of world leadership. There is varied teacher reactions, but for the most part they are highly enthusiastic. Some dubious, a little fearful, of getting into unknown territory, and a few are much against changing their ways. In time most of them can be won over by the success of their fellow teachers. When I say this I am thinking of the expression on the face of a New York teacher as he said: "I am convinced of the value of the arts and appreciative that I could work in a controlled experiment where all were dedicated to this principle. I would work for half my salary."

SELF-INSTRUCTION IN THE OPERATION OF AUDIOVISUAL EQUIPMENT

Maxine Haleff, Hunter College

The Audiovisual Equipment Operation Laboratory at Hunter College is now in its third year. Approximately 570 students have received certificates attesting to satisfactory completion of the course. Our future goal is to train approximately 800 students per year, and we have continually revised material where we found it necessary to clarify and emphasize in the learning situation.

At the inception of the Laboratory, a committee was formed to study methods, and these findings were presented to me when I became Laboratory Supervisor. Audiovisual Coordinator, Herman E. London, also contributed guidance and insights based on his experience teaching the A-V equipment course at Teachers College, Columbia University. An unique aspect of the Laboratory is that almost all of the students have been girls. It was expected that women might encounter special difficulties, because in our society they are not usually very concerned with the operation of machinery. However, they learned rapidly with clear instructions and non-technical vocabulary.

The laboratory program consists of a six-week series of one hour classes, with eight students per class using four machines. We have also worked with three people per machine, but this system makes it difficult for all to get equal learning experience. By starting with the simplest machines and proceeding to the more difficult, advantage can be taken of a cumulative effect in learning. During the first week, the opaque projector, the lantern slide projector, the overhead projector and a combination opaque and lantern slide projector were studied. The combination filmstrip 2" x 2" slide projector is taught during the second week. The third week is devoted to the tape recorder, and the motion picture projector is given two weeks of study. The sixth week is set aside for the examination.

The written instructions were originally to be the basis of audiovisual material for the laboratory, but we now feel that although audiovisual material can be more helpful to immediate learning, written material is invaluable for future reference. The student cannot possibly remember indefinitely everything learned in one hour, but will be able to refresh her memory if she is to operate the machine at a future time. The manual process of operating a projector, however, can be taught with greater facility through pictures in a related sequence. This eliminates the possible ambiguity of words and helps the student relate immediately to an action which she can see. By showing our slide and tape sequence on the filmstrip and slide projector, the average learning period of the class was cut down by one fourth to one third of the time, and many of the common mistakes were eliminated.

Timing and motion are important in operating the film projector, and so we have prepared a special film in which each action sequence is followed by a section of blank film long enough to give the student sufficient time to complete the same action herself. The effectiveness of slides as against motion pictures depends upon what action we are trying to teach.

For showing the correct position to remove the slide mechanism from the Viewlex, a still picture enables one to observe the position carefully. The motion used for demagnetizing tape is best shown in film, and so we have prepared a loop film to illustrate this technique. Other loops are planned to illustrate specific difficulties. In teaching a group of students, the loop film seems especially advantageous, because each person does not learn at the same speed and it is sometimes difficult to adjust to individual time differences in a long film. In operating any piece of AV equipment, there are usually specific trouble areas which can be best explained visually. A loop film can be kept running during an entire laboratory session, and the student can refer to the film whenever she feels it is necessary. Earphones can be provided, so the sound track will not interfere with the class work. Also, if one brand of machine is taught in class, a number of short loop films can be utilized to point out only the unusual and difficult areas of operation in another design of projector, thus taking advantage of the learning acquired on the original machine.

Since we anticipate a great many students, we are devising a test that can be given to an entire class in one hour and cover all the machines learned. For the examination, we use a Pressey-type punchboard with multiple choice questions. This makes it possible for those tested to find out the correct answers themselves. Since the criterion of effective learning in the course is operation of each machine, an effort is made to sample aspects of the operational situation without relying heavily on the kind of facts that are simply learned by rote. Those who pass the course satisfactorily are given certificates stating that they can operate audiovisual equipment. These may then be placed on file with the Hunter College Teacher Placement Office.

RECIPES FOR LEARNING

Frank J. Julio, Wantagh

I will attempt to present here a series of learning experiences, activities if you will, that are a product of our elementary school. They may illuminate an audiovisual function of integrating the total instructional program rather than supplementing it. I choose to call them RECIPES FOR LEARNING.

Each activity was cultivated to instill, inspire and achieve a togetherness of purpose in relating our many and varied experiences to our school program.

Recipe #1

EARLY AMERICANA

Early Americana is a teacher motivated exhibit of early American artifacts contributed by the faculty, students and parents. It relates directly to an area of our curriculum. The recipe itself was interesting but just as important is the attitude it transmitted which led to the dramatization by the faculty and students of the Pilgrim era. The student related himself to his peers and his elders thus reinforcing the exhibit.

Recipe #2

THE ADOPT-A-SHIP PLAN

The Adopt-A-Ship Plan is sponsored by the Propeller Club of the United States with national headquarters at 17 Battery Place, New York. Essentially, a ship is assigned to a class by the Adopt-A-Ship Plan for one school year. Upon being assigned a ship, the teacher must initiate a correspondence from class to ship. The ship's captain and crew have accepted their responsibility without renumeration but with the concept of introducing YOUNG AMERICA TO ITS SHIPS and to teach our young citizens the necessity of maintaining an adequate American Merchant Marine Service. This activity fostered an avid interest in all content areas, transportation, foreign trade and human relations. The success of this learning experience appeared in two national magazines, as, "Let's Adopt-A-Ship."

Recipe #3

THE AUTHOR-ILLUSTRATOR PLAN

The Author-Illustrator Plan was a borrowed idea from a Mrs. Hoffman, Librarian in the Oakmont Elementary School, Haverford Township, Pennsylvania. Our school librarian read of the work Mrs. Hoffman did in exhibiting materials collected from authors and illustrators and passed the information on to the writer. The heartbeat of the plan is to get behind the ideas or creative work done by authors and illustrators. This plan fascinated and captivated a school and community. Reading interest in our school and public library zoomed!

Letterwriting to their favorite authors began in earnest. Students chose their favorite books primarily from title, design, and cover appeal. The enthusiasm about writing to their favorite author or illustrator was overwhelming. They got their letters through to the authors and illustrators via the Children's Classified Catalog. Some interesting concepts emerged: children discovered that books are the result of developed ideas and authors and illustrators are, literally speaking, teachers who have "thousands" of students whose minds are set in motion through the medium of reading. The success of this activity appeared in the New York State Magazine, April 1962.

Recipe #4

THE MANDALAY TRAVEL BUREAU

This was a most fascinating experience rich and rewarding in adding new perspective to some old concepts of travel. The travel bureau was set up as near to its commercial counterpart as possible. A letter was sent by the teacher to the Department of Commerce in Albany for particulars and procedure to get it established. Thereafter, committees of students in two sixth grade classes set about writing to various agencies, travel bureau's, airlines, embassies, and etc. to collect travel posters and information on respective countries and off-beat areas. We probably had a more sophisticated bureau than some commerical ones. Our "seasoned" travelers were equipped with statistics, posters, charts, time schedules, globes, math answer sheets they had prepared in advance on time and distance, filmstrips, and even films. They were fully prepared, and it was in this spirited preparation that learning experiences took a firm hold. Our visiting travel-minded parents and many outside visitors, who were encouraged to visit the bureau on the strength of our local publicity and messenger service bulletin, were sent away very enthusiastic about their first hand information--reinforcing activities with AV resources? I think so.

SUMMARY

These learnings are a product of a team effort in which audio-visual served as the focal point of the learning process and not just a peripherial aid.

DEMONSTRATION OF TELETEACHING BY CLOSED CIRCUIT

Helen McDivitt, South Kortright (BOCES, District #3)

Environs of the Telephone Project and Reasons for Initiating the Experiment.

Supervisory District No. 3, comprised of parts of Delaware, Greene and Schoharie Counties, is located in the western Catskill Mountains. Mr. Melvin C. Carpenter is superintendent of this 1600 square mile district, assessed at $78,793,957 based upon true valuation. The nine schools are located in a rough semicircle, the farthest being thirty-four miles from the central office. The closed-circuit telephones, using over 1500 miles of wire, are an attempt to provide communication among 265 teachers and 3800 pupils in grades K-12, separated by mountains and many miles from metropolitan areas.

Educational television seems far off; a matter of terrain,location and small schools, none of which have an enrollment over 600. The present experimentation, an amplification of telephone teaching for the shut-in and the extension of the conference phone of industry endeavors to contact pupils of District No. 3 with people who can contribute to their learnings.

It is testing the feasibility of using long distance to connect them with the outside world. Twelve pupils in four schools conversed with their peers for thirteen minutes in Bangkok, 10,000 miles away.

Continuing Goals and Present Uses of the Tele-Learning Circuit

The first goal was to enrich our programs through the use of outside personnel. Our first sucess, a half-hour contact with the Associate Director of the Peace Corps in his Washington office, led to further conversations with representatives in governmental, industrial and educational fields.

From that goal, the project progressed to experiments in curriculum improvement. The most ambitious program, two semesters of weekly sessions in a Modern Math Teaching Course, is in the planning stage for September, 1964. Professors will teach from their offices in Columbia University, using the phones, films and tele-writing equipment.

A native-speaking Spanish teacher uses the closed circuits to reinforce her audio-oral language teaching in two elementary grades eight miles apart. That goal will be more fully realized when a schedule which meshes is worked out, enabling more participation by more classes.

The tele-learning phone circuit enables the chief officials to communicate without traveling long distances from their nine schools. Board meetings, incidental information, routine reports and notices are examples of administrative business carried on through the switchboard in the superintendent's office.

Pupils contact their peers. Joint Future Teachers Association meetings have been held in schools thirty miles apart; an established Honor Society carried on a meeting, amplified by phone for a group wishing to initiate one. The teachers communicated on shared interest, such as the House of Delegates resolutions.

Another goal is the sharing of good teaching. A teacher who does an excellent job teaching creative writing may be shared by a class whose teacher has other strengths.

Perhaps the most important goal is the attempt to provide pupil service not possible otherwise. The superintendent has been unable to secure a speech therapist. Four pupils in one school are now receiving help from a center, ninety miles away. Progress through a therapist's help weekly by phone, monthly by personal visit, augmented by taped exercises, pleases pupil, parent, therapist, and school. Plans are set up to provide the same help to the other eight schools.

The above mentioned goals are being realized. We are neither complacent nor satisfied. We do feel that we are not standing still waiting for television but are taking steps out into tomorrow.

TEAM TEACHING

David Rees, State Education Department
Ira Singer, Buffalo (BOCES, Erie #1)

The following is a brief condensation of a slide-tape presentation on team teaching, a program produced by David Rees, Associate in Educational Communications, of the Education Department. This presentation depicted team teaching approaches in three schools considered to be in the forefront of practicing team teaching.

Ridgewood High School located in Norridge, Illinois was described as a school that from the day the school opened, four years ago, was organized on the basis of team teaching. The faculty of this school was divided into two divisions - the sciences and the humanities. Objectives were determined bi-weekly by the various teams and sub-teams of teachers. Teams were organized into various sub-teams depending on the objectives to be achieved. Scheduling was most flexible and no bells rang for the changing of periods. A great deal of freedom and responsibility was placed upon the student. Some students were made teacher-assistants. Teachers seemed to like this method of teaching.

Wayland High School, located in Wayland, Massachusetts, was described *as a conventional school* which was in the process of changing to a team teaching approach to education. Unlike Ridgewood, Wayland High School had many conventional classroom situations. The school appeared to be highly selective in approaching large group instruction. A good deal of teaching experience was given intern teachers who seem to play an important part in the Wayland version of team teaching. Students were given a great deal of freedom and amply equipped areas in which to study.

The Brian McMahon School located in Norwalk, Connecticut was described as approaching team teaching on a limited extent. Whereas Ridgewood and Wayland extended team teaching to the total school situation, the Brian McMahon School concentrated team teaching efforts on 8th grade social studies. This school was equipped with two connecting large group teaching areas. Teacher aides and practice teachers were part of the teaching team of full-time teachers. Stations with headphones were provided for students to listen to and to work from audio tape. Students were more intensively supervised than were the situations in Ridgewood and Wayland.

At the conclusion of Mr. Rees's slide-tape presentation, Dr. Ira J. Singer, Director of Curriculum Research, 1st Supervisory District of Erie County, informed the group as to recent developments which have occurred in team teaching, specifically in the schools mentioned in Mr. Rees's presentation. Dr. Singer answered many questions posed by the group concerning scheduling, evidence in improvement of learning, and other ramifications of the team teaching approach to education.

FITTING AN AV PROGRAM TO THE SMALL SCHOOL

Allen Stripp, Old Forge

Traditionally, the audiovisual program in the small school has been handled by an interested administrator, with his secretary actually guiding the program. Or perhaps it was delegated to an unwary teacher for a slight adjustment in salary. These programs consisted primarily of ordering films, records, and filmstrips, making projector assignments and writing numbers on filmstrip cans.

More recently, the small school programs have been grouped for an area and governed by specially trained cooperative personnel. These generally are dedicated people whose control and influence is spread too thin. Besides instituting a functional program in each of the schools within their jurisdiction, they usually are in charge of a small film library. This position too often evolves into a position of audiovisual advisor to the administration of the small school. Hopefully, the cooperative specialist can work directly with some one teacher or administrator in each school and develop a fully operative program. Still more hopefully, the school will free time for a teacher already in the school who has shown special interest in audiovisual education, thus allowing the teacher to operate a program of assistance to fellow teachers. Utopia for the small school program would be to eventually have just such a person in a full time capacity; the position contingent upon proper course work and success as both a teacher and administrator of audiovisual services.

The primary objective of any audiovisual department should be to apply precision service to the instructional needs of its faculty and administration. This requires adequate personnel within each school or building, whether it be a full time or part time audiovisual director, or a building coordinator guided by a cooperative specialist.

We must generally agree that the specific educational goals of an Audiovisual Program are to:

1. increase the speed or rate of learning
2. increase the retention of learning
3. provide more direct, concrete experiences
4. develop desirable attitudes
5. motivate learning; create desire to learn
6. provide a greater variety of learning experience
7. increase reading skills and interests

However, goals which cannot be realized, at least in part, are of little value. To properly implement these educational goals, an Audiovisual Program must function to:

1. inform the faculty and administration of available equipment and materials
2. supply the faculty and administration with needed equipment, materials, and operational services

3. educate and train the faculty and administration in planning for the use of instructional materials and equipment
4. produce materials which are not available but are necessary for instruction
5. assist and advise the faculty and administration in planning for the use of instructional materials
6. report pertinent data and information to the faculty and administration
7. make recommendations to the faculty and administration based upon specialized information and knowledge
8. cooperate with the faculty and administration in all aspects of educational endeavor
9. evaluate the effectiveness of the program

Note the stress throughout these functions on faculty AND ADMINISTRATION. While the administration may not act in an instructional capacity within the classroom, it has instructional obligations within the community, and acts as liaison between the school and the community or public. The administration is the life blood of any department within a school, and its support must be nutured.

Let's go back now and explore each of these functions individually.

There is a wide range of ways to inform the faculty and administration of the available materials and equipment.

An Audiovisual Handbook is an important implement of information providing the "how to," "what," "when," and "where" of the program--what materials are available, how to select materials, when and how materials are distributed, and where can materials be obtained. Such a handbook should be edited yearly as practices and procedures change.

Color coded List Catalogs and Card Catalogs show the teacher what materials are presently available while a Resource File will make the teacher aware of the materials obtainable. With a Resource File should be a shelf of professional material and supplemental texts and bulletins for research and production ideas.

Bulletins published weekly, biweekly, or even monthly keep teachers informed of happenings and newly acquired items. Memo sheets of one type or another are very useful in keeping teachers and administrators informed of materials just released, or materials about to be released. They are very useful for informing teachers of radio and television programs of possible significance to their teaching. This can also be accomplished through the central sound system for magazine and newspaper articles, and for radio or television programs of a more general educational interest.

Probably the most informative device in the small school is the conversation between audiovisual personnel and the individual user. All the small problems and inconsistencies of a program can be ironed out by word of mouth through personal contact.

An Audiovisual Corps or Club is invaluable as a means of supplying the materials, equipment, and services required by teachers. Such a group serves the standard requirements of circulation, by delivering and picking up materials and equipment; and operation, by running or operating the equipment. However, the function of such a club can be expanded to include maintenance duties and simple repairs; clerical duties, such as classifying, storing, typing, and filing; and production procedures of all types.

Boys and girls alike are fascinated by professional looking materials which they have created. Students supply the production of photographic work, mounting, and making transparencies, recordings, and displays. In the small school the individual talents of the club members can be exploited and the production requirements tailored to the students abilities.

In the small school, where there is only one person in a department, it becomes essential to use a decentralized system of materials and equipment storage. Materials, and most equipment, are placed right in the classroom where it is to be used. The teacher has the needed materials right at his finger tips and the Audiovisual Center, usually a converted store room or closet, does not become over crowded.

Although the Instructional Communications Center is staffed each period with a receptionist to care for immediate problems, the greater part of the corps or club is called upon only as needed to perform his or her speciality. An assignment board outside the Center allows the students to tell at a glance if they have duties on a particular day. Unlike the club which only serves for circulation and operation, this more diversified club draws more diversified personalities and has become a sort of prestige factor among high school students.

To facilitate proper and adequate circulation of materials and equipment, there are necessary forms. These vary from school to school to fit the individual program.

The degree of success with supply will make or break an Audiovisual Program. Usually the success of a program is judged by the ability to supply items when they are needed. This is the tangible part of a program more easily viewed or grasped than the long range educational achievements. It is from supply that support is attained, and it is necessary to have faculty and administrative support to have a completely successful program.

Training teachers to use instructional materials and equipment is relatively easy in the small school. It is achieved simply and effectively through personal instruction. Training teachers to produce their own materials can also be done on an individual basis as the need arises. The materials thereby produced already have a place in the classroom and are not of the "possibly useful" nature usually found as the result of large group in-service training.

The production role of the Audiovisual Director is usually one of planning, with the audiovisual club members doing most of the actual work. Within the Instructional Communications Center is housed all the necessary production equipment excepting darkroom facilities which may or may not be located elsewhere, depending upon the individual school structure. In some cases, it may not even be necessary to have a darkroom in conjunction with an Instructional Communications Center.

Assistance and advice in planning for the use of instructional materials is usually best accomplished through personal contact where a discussion of successes, failures, and possible improvements in the use and utilization of materials can become pointed and objective enough to be of value. Specifics are discussed rather than generalities and better planning usually results.

It is here in the planning processes that the Audiovisual Director plays his most important role. He assumes a major responsibility for a schools educational achievements by assisting with curriculum and lesson planning; providing appraisal forms, teaching guides and resource files, formulating tour and field trip agendas, and offering preview facilities.

Reports are another function of the Audiovisual Director. As an outgrowth of careful records, data and projected information reports give the administration and Board of Education an insight into the uses being made of the program. Records must be kept of repairs, inventory, circulation, and in the absence of a purchasing agent, records of budget and expenditure must be kept.

An audiovisual specialist must be ready to make recommendations when such are required and requested. Such assistance might be in the area of planning school buildings and rooms for various instructional media, or perhaps a recommendation for equipment purchase.

It is extremely necessary for audiovisual personnel to cooperate in all phases of educational endeavor. It may not seem a part of the AV Program to make signs and posters for school functions, take pictures for the school paper, or chaperone class trips, but these are happenings within the life of the school community of which you are a part, and as such they deserve your support.

Lastly, periodical self-evaluation and administrative evaluation serve as a check on the program. It sometimes hurts to find shortcomings, but this knowledge certainly is beneficial in long range planning.

I trust that I have shown some of the imtimacy of a small school and shown the necessity of working with each teacher individually as though you functioned as a department to valet their needs. The teacher in the small school must assume all the extra duties requiring time which could be used for planning and discourse. There are no department heads to glean ideas from, no one with similar teaching problems. The AV specialist must of necessity bare his shoulders to these teachers, burdening some of their problems, and assist them in reaching solutions.

I leave you with this maxim:

INSTRUCTIONAL MATERIALS ARE A MEANS TO AN END, AND NOT AN END IN THEMSELVES.

COMMERCIALLY AVAILABLE OVERHEAD TRANSPARENCIES

George Wiesner, State Education Department

The field of ready-made transparencies for overhead projection is much more populated than a cursory examination would indicate. These materials are still somewhat expensive, but there has been progress toward economy through the manufacturing method of printing several colors of transparent inks on single sheets of acetate or overlays. It is also apparent that the producers are concerned that their materials be curriculum oriented.

The examples chosen for this presentation represent the products of the following suppliers:

Robert J. Brady Company
John Colburn Associates
Display Corporation of America
Encyclopaedia Britannica Films
General Airline and Film Corporation (Ozalid)
The Grade Teacher
Instructo
Keuffel and Esser
Technifax Corporation
Tweedy Transparencies

Although this list is not complete, the tyranny of time prevents a more total showing. There will be a brief analysis of each product.

Robert J. Brady Company, 130 Que Street, N.E., Washington, D.C. 20002

An innovation in cost reduction is the series published under the Econo-tran label. These visuals utilize single basic transparencies printed with one or more colors. Prices range from $.99 for a one color transparency to $1.53 for three colors. World Geography (44 transparencies), United States Geography (51 transparencies), and General Science (78 transparencies) are the series prepared in this form.

There are other series, utilizing overlays, on Problem of Democracy, Military History, General Science, Biology, Trigonometry, Plan Geometry, and Social Studies for the mentally handicapped, among others.

D.C.A. Educational Products, Inc., (a subsidary of Display Corporation of America), 231 East Allegheny Avenue, Philadelphia, Pennsylvania

These materials were originally prepared by RCA Educational Services but have since been taken over by DCA. Again, the manufacturing method is multiple printed transparency inks on acetate overlays.

A series on Social Studies contains 19 units (61 transparencies). Others include Chemistry, with 45 units (108 transparencies); Biology, 60 units (118 transparencies); Mechanical Drafting, 70 units (260 transparencies); Physics breaks down into Mechanics

(79 units), Heat (29 units), Sound (32 units), Light (56 Units), and Electricity (104 units). Most of these series qualify under NDEA.

General Airline and Film Corporation (Ozalid), Binghamton, New York

This company takes a double route. They package ready-made transparency sets; they also publish their material as books of masters printed on translucent paper. Utilizing the master and the diazo film and ammonia development method you can "do-it-yourself" and thereby effect a definite economy, particularly in the larger school systems where several complete sets of materials are required.

The subject areas are General Science (51 transparencies), Chemistry (50 transparencies), Human Biology (35 transparencies), Botany (45 transparencies), and Zoology (55 transparencies).

GAF, in the providence of catalogs, does an excellent job. Their "Library of Science" contains full color illustrations of each transparency together with a short curriculum guide which sets out to fully amplify the pedigogical point being made in the visual.

Encyclopaedia Britannica Films "Overview" Teaching Transparencies, 1150 Wilmette Avenue, Wilmette, Illinois

A unique physical arrangement is prepared by EBF to facilitate ready-access storage and flexibility in sequencing the overlays which are printed. Contained in a sturdy ring binder, the series of transparencies are alphabetically keyed but unmounted and can be registered in a rigid plastic frame mask in any desired sequence.

Five subject area series are now available: The Language of Maps, 16 transparencies in four units; U. S. Growth and Expansion, 27 transparencies in five units; Africa, 16 transparencies in three units; Biology: Human Anatomy, 10 transparencies in two units; and Biology: Vertebrates, 8 transparencies in one unit.

The Grade Teacher, Teachers Publishing Corporation, 23 Leroy Avenue, Darien, Connecticut

Diazo film transparencies are available in the following subject matter areas: Social Studies, Science, and Arithmetic.

John Colburn Associates, Inc., 1122 Central Avenue, Wilmette, Illinois

An indication of what the future holds may be gained by an examination of a direction which this company is taking toward the production of integrated teaching machines.

A package of materials for the teaching of Fractions contains 43 diazo transparencies with 128 overlays and a series of six sound color motion pictures.

Another series of transparencies on the Modern Math is correlated with a text, "Major Concepts of Elementary Modern Mathematics," with plans for the addition of films.

This multi-media approach would seem to be an interesting development in the audiovisual field where there has generally been a separation of methods, a single mindedness in the solution of a teaching problem.

Instructo Products Company, (a Division of Jacronda Manufacturing Company), Philadelphia 31, Pennsylvania

This company concentrates their fire on transparencies for the grades 3 to 8. Utilizing transparent inks on acetate. Instructo's subjects include series on the Universe, Machines, Energy, Life Cycle, Fractions, Measurement, Problem Solving, and Weather among others.

Included with each transparency is a comprehensive teacher's guide. A small but convenient plus in this line of products is the see-through sippered envelope offering protection and quick recognition.

Keuffel and Esser, Audio-Visual Division, Hoboken, New Jersey

In addition to manufacturing an extensive line of diazo materials and equipment, K&E is now merchandising complete courses in the areas of Physics and Chemistry. These take the form of printed masters on translucent paper for the do-it-yourself market. They appear to be comprehensive and thoroughly researched. The Physics course made up of 88 transparencies with overlays covers Atomics, Optics, Waves, Electricity, Mechanics, and Measurement.

Technifax Corporation, Holyoke, Massachusetts

Another broadly based manufacturing concern, Technifax, offers a full range of diazotype films and equipment for local production of transparencies. Among the subject areas for which they produce transparency sets are General Chemistry (59 transparencies); Driver Education (26 transparencies); Geometric Constructions (45 transparencies); Trigonometry (66 transparencies); and Biology (13 transparencies).

Their catalog lists many additional individual transparencies.

Tweedy Transparencies, 321 Central Avenue, Newark, New Jersey

This supplier of materials has in its lineup several series which are somewhat off the beaten path. For instance, in the area of Guidance a series on the Development of Study Skills is made up of 18 transparencies. Another series on Test Interpretation can benefit students and parents as well as teachers.

A fairly unique series of 30 electron photographs offer a stimulus to biological investigation.

Other series available include a Spanish-French language group (42 transparencies); a Reading Skills program (101 transparencies); Botany (27 transparencies); Zoology (40 transparencies); and Human Physiology (26 transparencies).

LIST OF PARTICIPANTS

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Frank M. Abate, Audio Visual Coordinator, North Babylon Public Schools, North Babylon, N.Y.

J. Emil Abeles, Director of Audio Visual Services, Union Free School District #3, 209 East Main St., Huntington, N.Y.

Seymour B. Abeles, Supervisor of Audio Visual Education, Buffalo Public Schools, 7th Floor, City Hall, Buffalo 2, N.Y.

Douglas Allan, District Manager, Encyclopaedia Britannica Films, 202 East 44th St., New York 17, N.Y.

Richard Allen, Ray Supply, Inc., P.O. Box 745, Glens Falls, N.Y.

S. P. Alter, President, Edu-Tronics, Inc., 459 Broadway, Hicksville, N.Y.

Beatrice Arlt, Administrative Assistant to President, Educational Broadcasting Corp., 1657 Broadway, New York 19, N.Y.

Richard Averson, Instructor, Syracuse University, TV-Radio Center, Syracuse, N.Y.

Catherine M. Bailey, Supervisor Audio Visual Instruction, Troy City School District, 1950 Burdett Ave., Troy, N.Y.

Clare C. Baldwin, Associate Superintendent, Board of Education, 110 Livingston St., Brooklyn 1, N.Y.

Ruth Barenthaler, Special Teacher - Audio-Visual, Elmira Consolidated District, Beecher School, Sullivan St., Elmira, N.Y.

William Bartram, Science and Humanities Materials Consultant, Encyclopedia Britannica Films, 1150 Wilmette Avenue, Wilmette, Illinois

Emerson B. Bateman, Coordinator of Audio-Visual Services, Department of Education, 98 Oak Street, Binghamton, N.Y.

John V. Battram, Supervisor of Instructional Materials, White Plains Board of Education, 5 Homeside Lane, White Plains, N.Y.

Carl Baumbach, Director Audio-Visual Education, Albany Public Schools, Academy Park, Albany 7, N.Y.

Elwood H. Beaver, Director Audio-Visual Education, Central School Dist. #2, 300 Pulaski Street, Riverhead, N.Y.

Theodore H. Beers, Audio-Visual Director, State University College at Oswego, 148 West 7th St., Oswego, N.Y.

Robert C. Bell, Design Engineer, Audio-Visual Communications, 84 Rome St., Farmingdale, N.Y.

Eril S. Belz, Instructor, Rensselaer Polytechnic Institute, 54 Willett St., Albany, N.Y.

E. G. Bernard, Director, Bureau of Audio Visual Instruction, N.Y.C. Board of Education, 131 Livingston St., Brooklyn 1, N.Y.

Frank Bishop, Jr., Assistant Principal, Jamesville-DeWitt High School, 4245 Coye Road, Jamesville, N.Y.

Owen R. Bliven, Curriculum Aids Consultant, Kenmore Public Schools, 1500 Colvin Blvd., Kenmore, N.Y.

Charles M. Bloomquist, State University of New York College of Ceramics, Alfred, N.Y.

Lester Blum, Director Audio-Visual Service, Colgate University, Hamilton, N.Y.

Allan P. Bradley, Executive Assistant to the Commissioner, State Education Department, Albany, N.Y.

G. Leonard Brooks, Technical Assistant, Bronx Community College, 120 East 184 St., Bronx, N.Y.
John S. Bross, Instructor, Department of Language and Literature, Rensselaer Polytechnic Institute, Troy, N.Y.
David P. Brown, Contract Manager, Sonocraft Corp., 115 West 45 St., New York 36, N.Y.
Ernest N. Brown, Curriculum Coordinator, Board of Cooperative Educational Services, Village Hall, Fredonia, N.Y.
Louis H. Brown, Director Audio-Visual Communications, Hamburg Dist. #1, Legion Dr., Hamburg, N.Y.
Robert M. Brown, Division of Educational Communications, State Education Department, Albany, N.Y.
T. E. Burford, Director of Audio-Visual Education, Lewiston-Porter C.S., Youngstown, N.Y.
Thomas S. Butera, Audio-Visual Director, Herricks Jr. H.S., Herricks Rd., New Hyde Park, N.Y.
Harry O. Butler, Director of Audio-Visual Education, Massena Central Schools, Massena, N.Y.
John D. Button, Audio-Visual Director, Board of Cooperative Educational Services, P.O. Box 592, Herkimer, N.Y.
Robert Cammarata, Audio-Visual Coordinator, Dist. #29, 1057 Merrick Ave., North Merrick, N.Y.
Maurice B. Camp, Director of Audio-Visual Services, State University College, Plattsburgh, N.Y.
Lee E. Campion, Division of Educational Communications, State Education Department, Albany, N.Y.
Hank Cantor, Eastern Camera, 68 West Columbia St., Hempstead, N.Y.
R. A. Carney, Librarian, Ticonderoga High School, 352 Lake George Ave., Ticonderoga, N.Y.
Vincent Carey, Visual Aids Coordinator, Onteora Central School, Boiceville, N.Y.
Fang-Mei Chen, 4 Lane 17, Chinmen St., Taipei, Taiwan, China
Lowell Christman, Ray Supply Inc., P.O. Box 745, Glens Falls, N.Y.
Marion Christopher, Teacher, Rombout School, 34 So. Cedar St., Beacon, N.Y.
Frances Ciancanelli, Teacher, Rombout School, 182 Rombout Avenue, Beacon, N.Y.
A. Richard Clark, Audio-Visual Director, Scarsdale Public Schools, Audio-Visual Center, Post Road, Scarsdale, N.Y.
F. B. Clark, District Superintendent, Athens, N.Y.
Rutherford K. Clark, President, The Rud Clark Co., Inc., Box 46, DeWitt 14, N.Y.
Samuel Cohen, Assistant Superintendent for Instruction, Hewlett-Woodmere School, 60 Everit Avenue, Hewlett, N.Y.
Reese B. Cole, Building Audio-Visual Representative, Greece C.S., 477 Ogden Parma T.L. Road, Spencerport, N.Y.
Alfred Cona, Audio-Visual Coordinator, Irondequoit Central Schools, 2222 Ridge Road East, Rochester 22, N.Y.
Joy Marie Conley, Instructor, Ladycliff College, 111 Mearns Ave., Highland Falls, N.Y.
William T. Conway, College Planning Coordinator, State University of New York, 194 Washington Ave., Albany, N.Y.

Bernarr Cooper, Division of Educational Communications, State Education Department, Albany, N.Y.

Julian V. Cowan, Audio-Visual Coordinator, Lindenhurst High School, 350 S. Wellwood Ave., Lindenhurst, N.Y.

Arthur R. Cowdery, Jr., CCTV Building Coordinator, East High School, 1801 Main Street, East, Rochester, N.Y.

Harold C. Crittenden, R.D. #3, Kasson Road, Syracuse 15, N.Y.

William J. Cronin, Teacher, Margaretville Central School, Margaretville, N.Y.

William E. Crosby, Audio-Visual Coordinator, Eastridge High School, 2360 Ridge Road East, Rochester, N.Y.

David M. Crossman, Division of Educational Communications, State Education Department, Albany, N.Y.

Donald Curtis, Assistant Director of Audio-Visual Education, University of Massachusetts, Amherst, Mass.

Irene F. Cypher, Associate Professor of Education, New York University, 180 Cabrini Blvd., New York City, N.Y.

C. M. Darcy, Supervisor of Education, New York State Museum, Albany, 1 N.Y.

John A. Davis, Director, Audio-Visual Services, Syracuse University, 150 Winchell Rd., University Hgts., Syracuse, N.Y.

Frank DelBosco, Audio-Visual Director, South Huntington School Dist. #13, Huntington Station, N.Y.

Rita Dennis, Elementary School Teacher, Penfield Central School, 702 Landing Road North, Rochester 25, N.Y.

W. E. Dennis, Audio-Visual Director, Brighton School Dist. #1, Monroe & Elmwood Ave., Rochester, N.Y.

Dominick A. DeSimone, Teacher, Schalmont C.S., Jefferson Elementary School, 100 Princetown Rd., Schenectady, N.Y.

M. Wesley Detwiler, Eastern Representative, Bailey Films, Inc., 113 S. Schuylkill Ave., Morristown, Pennsylvania

Richard E. Deuel, Communications Consultant, New York Telephone Co., 159 No. Franklin St., Hempstead, N.Y.

Joseph E. Dickman, Director of Training, Encyclopaedia Britannica Press, 425 North Michigan Avenue, Chicago 11, Illinois

J. Paul Dohl, Principal, Olean Jr. High School, 1001 North Union St., Olean, N.Y.

Raymond Donney, Elementary Coordinator, Clymer Central School, Clymer, N.Y.

John S. Dooley, Director, Department of Audio-Visual Instruction, Boston Public Schools, 95 Selden St., Dorchester, 24, Massachusetts

Charles Drago, Jr., Director of Audio-Visual Education, Draper Schools, Draper Ave., Schenectady 6, N.Y.

Joseph F. Dylong, Principal, Vrooman Ave. School, Amsterdam, N.Y.

Edwin Egan, Division of Educational Communications, State Education Department, Albany, N.Y.

Charles M. Eddy, Audio-Visual Director, Hornell Consolidated Schools, Junior High School Building, Hornell, N.Y.

Eugene Edwards, Coordinator, Instructional Resources Center, Greece Central School Dist. #1, 1139 Maiden Lane, Rochester, N.Y.

Jean Eisenhut, Librarian, Hyde Park Central School Dist. #1, Netherwood Elementary School, Netherwood Rd., Hyde Park, N.Y.

Josef A. Elfenbein, Professor of English, Speech and Theatre, State University College at Oneonta, Oneonta, N.Y.

Donald J. Elliott, Director Audio-Visual, Malone Public Schools, Franklin Academy, Malone, N.Y.
Joseph M. Elliott, Audio-Visual Supervisor, Pace College, 41 Park Row, New York, N.Y.
William E. Endres, General Manager, Tele-Measurements, Inc., 45 West 45th St., New York, N.Y.
D. G. Estberg, Keuka College, Keuka Park, N.Y.
Clifford Ettinger, Supervisor Motion Picture Production, N.Y.C. Board of Education, 131 Livingston Street, Brooklyn 1, N.Y.
Robert F. Eusner, Teacher, Ardsley Public Schools, Ashford Ave. School, Ardsley, N.Y.
Ellen Fancher, Instructional Materials, Grand Island Jr. Sr. High School, Ransom Road, Grand Island, N.Y.
Stephen J. Fates, Teacher & Audio-Visual Representative, Union Free School District #4, 56 West St., Northport, N.Y.
Fritz Febel, Director of Audio-Visual Center, State University of New York at Buffalo, 2510 Colvin Blvd., Tonawanda, N.Y.
Salvatore A. Fedele, Elementary Principal, South Glens Falls Central, Harrison Ave. School, South Glens Falls, N.Y.
Stephen J. Feit, Audio Visual Consultant, Dist. #30 Schools, Clear Stream Ave. School, Valley Stream, N.Y.
Kenneth N. Fishell, Assistant Professor, University of Rochester, College of Education, Rochester 27, N.Y.
Edgar D. Fisher, Audio-Visual Director, Red Hook Central School, Red Hook, N.Y.
George W. Forbes, Administrative Assistant, 521 Conklin St., Farmingdale, N.Y.
Frederick Finkeldey, Assistant Principal, Haviland Jr. High School, Hyde Park, N.Y.
Thomas S. Finn, Sales Manager, Utronics, Inc., 12 Franklin Ave., Clinton, N.Y.
L. Francisco, Sales Manager, Micro-Link Corp., 1355 Marconi Blvd., Copiague, N.Y.
Esther Frazier, Vice Principal, Maine Memorial School, Maine, N.Y.
Morris Freedman, Assistant Director, Bureau of Audio-Visual Instruction, Board of Education, 131 Livingston Street, Brooklyn, N.Y.
Jack Fruman, Teacher, Audio-Visual Building Coordinator, Richard J. Bailey School, 33 W. Hillside Ave., White Plains, N.Y.
Marjorie S. Fry, Librarian, F.D. Roosevelt High School, Hyde Park, N.Y.
William Gaffney, Principal, West Street School, 85 Carpenter Ave., Newburgh, N.Y.
Frank E. Gainer, Board of Cooperative Educational Services, Wilton, N.Y.
Frank S. Garcia, Elementary Principal, South Glens Falls School, 13 Ferry Blvd., South Glens Falls, N.Y.
Chester S. Galle, Audio-Visual Director, State University Agricultural and Technical Institute, 102 Main Street, Almond, N.Y.
M. C. Gassman, Associate Professor, Rensselaer Polytechnic Institute, Troy, New York
Harry Gillman, Business Manager, Hauppauge Central School, Hauppauge, N.Y.
John P. Glasgow, High School Principal, Beekmantown Central School, Box 891, Plattsburgh, New York
Joseph A. Goldwasser, Director of Instructional Materials, East Williston Public Schools, East Williston, N.Y.

Arthur Goldstein, Audio-Visual Building Coordinator, Herricks Senior High School, 1525 E. 26 Street, Brooklyn 29, N.Y.

Edward Golub, Assistant Director, Technical Operations, Board of Education, 131 Livingston St., Brooklyn 1, N.Y.

Douglas Gomez, Audio-Visual Consultant, Baldwin High School, High School Drive, Baldwin, N.Y.

Melvin G. Goodell, Audio-Visual Coordinator, Middletown High School, Grand Avenue, Middletown, N.Y.

Sheldon A. Goodman, Assistant Professor, State University of New York at Oswego, Audio Visual Center, Oswego, N.Y.

Watson Goodrich, Assistant Superintendent, Onteora School, Boiceville, N.Y.

Raymond Graf, Division of Educational Communications, State Education Department, Albany, N.Y.

Paul J. Graig, Secondary Vice Principal, Shenendehowa Central School, Elnora, N.Y.

Ralph C. Grandinetti, Television Producer, Central School District #4, Central Park Road School, Plainview, N.Y.

Alfred D. Grant, Audio-Visual Coordinator of Methods, State University at Cortland, Education Building, Cortland, N.Y.

Carson H. Graves, Audio-Visual Director, Board of Cooperative Educational Services, 17 Berkley Drive, Port Chester, N.Y.

John T. Graves, Associate Professor, New York City Community College, 300 Pearl St., Brooklyn 1, N.Y.

Edward Greco, Coronet Films, 42 Midland Road, Roslyn Heights, N.Y.

Burt Green, Audio-Visual Director, Board of Cooperative Educational Services, Audio Visual Center, Lyons Falls, N.Y.

Peter Greenleaf, Supervisor of Audio-Visual Instruction, New York City Board of Education, 131 Livingston St., Brooklyn 1, N.Y.

Toni Gregg, Audio-Visual Director, Broome Technical Community College, Binghamton, N.Y.

Richard R. Gross, Audio-Visual Director, Kendall Central School, 415 Holley Street, Brockport, N.Y.

George Grossman, Treasurer, Edu-Tronics, Inc., 459 Broadway, Hicksville, N.Y.

David V. Guerin, Coordinator Instructional Materials, Garden City Public Schools, Cathedral Avenue & 7th St., Garden City, N.Y.

Edward A. Habicht, Audio-Visual Director, Vestal Central School, Vestal, N.Y.

Rose Hoffman, Helping Teacher, City School District of New Rochelle, 291 Sickles Ave., New Rochelle, N.Y.

Horace M. Hagar, Director, Elementary Education, Amsterdam Public Schools, Amsterdam, N.Y.

Peter D. Haikalis, Instructor, Department of Language/Literature, West Hall, Rensselaer Polytechnic Institute, Troy, N.Y.

Maxine Haleff, Audio-Visual Assistant, Hunter College, 695 Park Ave., New York 21, N.Y.

R. F. Handel, Division Manager, Television Utilities, 558 Cortland Ave., Syracuse, N.Y.

Bernard T. Hanley, Audio-Visual Director, Middle Country School District, Centereach, New York

Margaret C. Hannigan, Public Library Adult Service Consultant, New York State Library, Library Extension Division, Albany 1, N.Y.

James F. Hargrave, Administrator for Primary Schools, Averill Park Central School, Box 456, West Sand Lake, N.Y.
George Hark, Principal, Fleetwood School, Fleetwood Ave., Spring Valley, N.Y.
Richard A. Hawkins, Director Elementary Education, Ramapo Central School District #2, 471 Viola Road, Spring Valley, N.Y.
Kathryn Hearle, Supervisor, Bureau of Audio-Visual Instruction, Board of Education, Quaker Bridge Road East, Croton-on-Hudson, N.Y.
William F. Heffner, Division of Educational Communications, State Education Department, Albany, N.Y.
Eulalie Heffron, Teacher, Audio-Visual Chairman, School 18, 6 Sherry Road, Troy, N.Y.
Robert Henderson, CCTV Regional Manager, Fairchild-Dumont, 750 Bloomfield Ave., Clifton, New Jersey
Floyd E. Henrickson, Professor of Education, State University at Albany, 24 Danker Avenue, Albany, N.Y.
Theodore K. Henry, Director Audio-Visual Education, Penn Yan Central Schools, Penn Yan, N.Y.
William G. Henry, Division of Educational Communications, State Education Department, Albany, N.Y.
P. Herbert, Principal Mohonasen Central School, Carman Elementary School, Schenectady, N.Y.
Ward E. Herrmann, Director of Art and Design, Deli Technical Institute, Brookside Bldg., Delhi, N.Y.
James Hines, Superintendent, Middle Country Central School, Unity Drive School, Centereach, N.Y.
Robert W. Holliday, Audio-Visual Director, State University College at New Paltz, New Paltz, N.Y.
Kathleen M. Hollister, Director of Libraries, East Greenbush Central Schools, Room 128, Columbia High School, East Greenbush, N.Y.
C. J. Holt, Audio-Visual Coordinator, Hartsdale Public Schools, 200 N. Central Ave., Hartsdale, N.Y.
Elmer N. Horey, Elementary Audio-Visual Director, Cassadaga Elementary School, 176 Maple Ave., Cassadaga, N.Y.
Robert L. Horton, Principal for Elementary Education, South Glens Falls Central School, South Glens Falls, N.Y.
Wilbur F. Hoyt, Director Audio-Visual, Vice Principal, Verona Central School, Verona, N.Y.
Richard D. Hubbard, Division of Educational Communications, State Education Department, Albany, N.Y.
F. D. Hudson, President, United Transparencies, 57 Glenwood Ave., Binghamton, N.Y.
William Humphrey, Division of Educational Communications, State Education Department, Albany, N.Y.
Charles Hyser, 3M Company, 258 Hillcrest Road, Strafford-Wayne, Penna.
Saisuke Ieno, Instructor, State University College at Oswego, 102 E. 7th St., Oswego, N.Y.
Paul H. Imbrock, Audio-Visual Coordinator, State University College, Oneonta, N.Y.
F. Ingold, Jr., Account Manager, New York Telephone Co., 158 State St., Albany, N.Y.
Halas L. Jackim, Professor, State College at Oswego, 214 Ellen St., Oswego, N.Y.

Charles R. Jelicks, Assistant to Director, Hempstead High School, 70 Greenwich St., Hempstead, N.Y.

James T. Jensen, Eastern Manager, Walt Disney 16mm Films, 477 Madison Ave., New York, N.Y.

J. Robert Johnson, Elementary Supervisor, Bemus Point Elementary Schools, Bemus Point, N.Y.

Leslie Johnson, Division of Educational Communications, State Education Department, Albany, N.Y.

Richard A. Jones, Director, St. Lawrence Valley ETV Council, Academy Street School, Watertown, N.Y.

Frank Julio, Teacher-Building Audio-Visual Coordinator, Mandalay School, Wantagh, N.Y.

Frank Kahn, Acting Director of Broadcasting, Queens College, Flushing 67, N.Y.

Michael Kaufman, Educational Communications Specialist, Board of Co-operative Educational Services of Wyoming County, Warsaw, N.Y.

Anthony Kauth, Audio-Visual Director, Union Free School District #16, Elmont Road School, Elmont, N.Y.

David J. Keller, Training Management-Polaris, Sperry Gvro. Co., #2 Aerial Way, Syosset, N.Y.

Muriel Kellerhouse, Assistant Professor, State University College, 48 Church St., Oneonta, N.Y.

Maurice Kessman, Director, Office of Educational Research, Rochester Institute of Technology, 65 Plymouth Ave. South, Rochester 8, N.Y.

E. T. Knobloch, Principal, North Syracuse Central Schools, Pitcher Hill School, North Syracuse, N.Y.

Lucile M. Kohles, Building Coordinator Audio-Visual, Nottingham High School, 3100 East Genesee Street, Syracuse 3, N.Y.

Raymond H. Kuipers, Director Audio-Visual Education, Clarion State College, Clarion, Pennsylvania

Norman D. Kurland, Consultant, College of Professional Examiners, New York State Education Department, Albany, N.Y.

Grace N. Lacy, Division of Educational Communications, State Education Department, Albany, N.Y.

Phil Lange, Professor of Education, Teachers College Columbia University, New York 27, N.Y.

Charles L. Lauer, Principal, Holbrook Road, Centereach, N.Y.

William J. Lawler, District Audio-Visual Coordinator, Greece Central School District #1, 1790 Latta Rd., Rochester, N.Y.

Bert Lazerus, Manager Audio-Visual Sales, Potter's Photographic Applic., Co., 160 Herricks Road, Mineola, N.Y.

James E. LeMay, Coronet Films, 65 E. So. Water St., Chicago, Illinois

Sanford M. Levene, Audio-Visual Director, Bronxville Public Schools, Bronxville School, Bronxville, N.Y.

Dalton Levy, Audio-Visual Director, Plainedge Schools, Wyngate Drive, North Massapequa, New York

Elizabeth J. Lewis, Audio-Visual Coordinator, Hastings Public Schools, Farragut Avenue, Hastings-on-Hudson, N.Y.

Ticknor B. Litchfield, Assistant Principal, Dobbs Ferry High School, Dobbs Ferry, N.Y.

Ernest F. Livingstone, Associate Professor, Rensselaer Polytechnic Institute, 407 West Hall, Troy, N.Y.

Harry D. Loder, Owner, Rasmussen & Reece, 6 Guy Park Ave., Amsterdam, N.Y.

J. A. Loncao, Assistant Superintendent, Middle Country Central School Dist. #11, Centereach, N.Y.

Herman E. London, Audio-Visual Coordinator, Hunter College, 695 Park Ave., New York 21, N.Y.
Sarah W. Lorge, Chairman, Language Laboratory Studies, Bureau of Audio-Visual Instruction, 131 Livingston Street, Brooklyn 1, N.Y.
Everett Lare, Director Audio-Visual Education, Ossining Public Schools, 29 South Highland Ave., Ossining, N.Y.
Coy Ludwig, Empire State FM School of the Air, Syracuse University, Syracuse, N.Y.
Michael Luffred, Educational Communications Consultant, Board of Cooperative Educational Services, Cattaraugus County, Little Valley, N.Y.
Joseph K. Lukas, Office Manager, Audio-Visual Communications, Inc., 84 Rome St., Farmingdale, N.Y.
Charles E. Luminati, Director, Audio-Visual Services, Great Neck Public Schools, 345 Lakeville Road, Great Neck, N.Y.
Leo Lupien, Owner, Audio-Visual Sales & Service, 23 Velind Ave., Albany 3, N.Y.
James F. Macandrew, Director of Broadcasting, New York City Board of Education, Channel 13/WNDT, 1657 Broadway, New York, N.Y.
Peter Madsen, Chairman Audio-Visual Department, Gates-Chili Central School, 910 Wegman Road, Rochester 24, N.Y.
Elaine Cramoy Magid, Assoc. Professor, French, Chairman Foreign Language Dept., Rockland Community College, 19 College Road, Suffern, N.Y.
Gerald Mandel, Director of Marketing, Sterling Educational Films, 241 E. 34th St., New York, N.Y.
Philip C. Martin, President, Westchester Community College, 75 Grasslands Road, Valhalla, N.Y.
James I. Mason, Superintendent of Schools, 628 Cayuga Heights Road, Ithaca, New York
Robert W. Mason, Audio-Visual Officer, A. Lincoln School, 50 Ontatio View St., Richester 17, N.Y.
F. T. Mathewson, Associate Professor, Hofstra University, 15 Southminster Drive, White Plains, N.Y.
Maynard Matteson, Audio-Visual Director, Holland Patent Central School, Holland Patent, N.Y.
Everett V. Maxwell, Consultant in Audio-Visual Communications, Rhode Island State Education Department, 600 Mt. Pleasant Ave., Providence, R.I.
L. P. Maxwell, Consultant-Executive Communications, General Electric Co., 570 Lexington Ave., New York City, N.Y.
Joseph A. M. Mazza, Audio-Visual Technician, Springfield Public Schools, P.O. Box 1410, Springfield, Massachusetts
James M. Meagher, Coordinator, Audio-Visual Instructional Materials, Penfield Central Schools, Penfield, N.Y.
John B. McCagg, Audio-Visual Supervisor, East Meadow Public Schools, East Meadow, N.Y.
Donald F. McCulloch, Assistant Professor Modern Languages, Bronx Community College, 120 East 184 Street, Bronx, N.Y.
Helen McDivitt, Audio-Visual Director, Board of Cooperative Educational Services, South Kortright, New York
Richard J. McDonald, Assistant Superintendent for Instruction, Corning-Painted Post Area School Dist., 291 East 1st St., Corning, N.Y.
Hugh E. McKinnon, Graduate Assistant, Syracuse University, 121 College Place, Syracuse, N.Y.
Roger McVannan, Audio-Visual Aids Director, Owego Free Academy, Elm Avenue, Owego, N.Y.
Francis Merrill, D.C. Heath & Co., 475 South Dean St., Englewood, New Jersey

Lawrence G. Mickel, Teacher, Norwich City Schools, 75 Cortland St., Norwich, N.Y.
William L. Millard, Assistant Director, Office of Institutional Research, Rensselaer Polytechnic Institute, Troy, N.Y.
Robert F. Miller, Audio-Visual Supervisor, Board of Cooperative Educational Services, Camden Central School, Camden, N.Y.
Joseph Millman, Supervisor, Board of Education, 131 Livingston St., New York City, N.Y.
L. H. Mingins, 65 Shoreview Rd., Manhasset, N.Y.
Garrett Mitchell, Jr., Assistant Professor of Audio-Visual Education, State University College, Oswego, NY
Edwin H. Mizer, English Department, Central School Dist. #4, 50 Senter St., Chappaqua, N.Y.
Ursula M. Moran, Audio-Visual Coordinator, Brooklyn & Richmond Jr. High Schools, 330 First Ave., New York, N.Y.
Lois Ann Morgan, Instructor, The King's College, Briarcliff Manor, N.Y.
Philip R. Morrison, Assistant Director, Syracuse University, 121 College Place, Syracuse, N.Y.
Alfred S. M. Moses, Associate Director, Audio-Visual Center, State College, 48 Meadow Drive, Spencerport, N.Y.
Mother M. Joy, Supervisor of Studies, Convent of the Sacred Heart, Albany, N.Y.
Edward Moy, Director, Educational Communications Department, Ithaca City Schools, Ithaca, N.Y.
Lawrence Myers, Jr., Chairman, TV-Radio Department, Syracuse University, Syracuse 10, N.Y.
Nat C. Myers, Jr., Director Communications Products & Services, Fairchild C & I, 221 Fairchild Ave., Plainview, N.Y.
Ruth E. Myers, Assistant Librarian, Audio-Visual Services, Bennett College, Millbrook, N.Y.
Albert J. Nash, General Manager, System Equipment Corp., 260 Broadway, Brooklyn 11, N.Y.
Marion Neil, President, Metropolitan N.Y. Audio-Visual Association, 59 West Tenth St., Apt. 6E, New York 11, N.Y.
Richard E. Nibeck, Convention Coordinator, DAVI/NEA, 1201 16th St., N.W., Washington 6, D.C.
Joseph Novello, Regional Manager, Encyclopaedia Britannica Films, 202 E. 44th Street, New York 17, N.Y.
Bertha Odessky, Supervisor of Audio-Visual Instruction, Board of Education, 131 Livingston St., Brooklyn 1, N.Y.
Lewis O'Donnell, Associate Professor of Audio-Visual Education, State University of New York at Oswego, Oswego, New York
Wilbur C. Olmstead, Principal, Herricks Junior High School, Herricks Rd., New Hyde Park, N.Y.
Olwyn O'Connor (Mrs.) Assistant Supervisor, Schenectady Audio-Visual Department, 564 Broadway, Schenectady, N.Y.
Edwin F. Ore, State University College of Education, Farmingdale, N.Y.
Eugene Oxhandler, Associate Director, Research, Syracuse University, 121 College Place, Syracuse, N.Y.
William A. Parker, Audio-Visual Director, Freeport Public Schools, So. Brookside Avenue, Freeport, N.Y.
Sal Parlato, N.Y.S. District Manager, Encyclopaedia Britannica Films, 695 Delaware Ave., Buffalo 9, N.Y.

James H. Parsons, Audio-Visual Director, Roslyn School District, Harbor Hill Road, Roslyn, N.Y.
Edward Pasto, Assistant Superintendent of Schools, Fayetteville-Manlius Central School, 107 Pleasant St., Manlius, N.Y.
E. Jerry Paulson, Jr., District Sales Supervisor, D. C. Heath & Co., 475 So. Dean St., Englewood, New Jersey
Kenneth Phelps, Vice Principal, Fayetteville-Manlius Jr. High School, Fayetteville, N.Y.
Mary E. Pickett, Teacher, Mechanicville High School, Mechanicville, N.Y.
J. R. Poppele, President, Tele Measurements, Inc., 45 W. 45th St., New York, N.Y.
Robert M. Porter, Professor of Education, State University College, Oneonta, N.Y.
Sheldon R. Porter, Teacher, Bedford Public Schools, Bedford Hills School, Bedford Hills, N.Y.
A. M. Potter, President, Potter's Photographic Applications, Co., 160 Herricks Rd., Mineola, N.Y.
Royal A. Powers, Audio-Visual & Television Director, Auburn Public School, 129 North St., Auburn, NY
H. Edgar Pray, Director of Educational Research, Niskayuna Public Schools, Schenectady 9, N.Y.
John M. Purcell, Dean of Instruction, State University of New York, Melville Road, Farmingdale, N.Y.
Henry J. Queen, Supervisor, Bureau of Audio-Visual Instruction, 8 St. John's Ave., Hicksville, N.Y.
Marvin A. Rapp, President, Long Island Educational Television Council, Nassau Community College, Garden City, N.Y.
Walter E. Raude, Divisional Chairman, Westchester Community College, 175 Grasslands Rd., Valhalla, N.Y.
Taher A. Razik, Assistant Professor & Research Associate, State University of New York at Buffalo, 157 Hayes Hall, Buffalo 14, N.Y.
Albert J. Read, Associate Professor, Physics, Oneonta State College, Oneonta, N.Y.
Luton R. Reed, Audio-Visual Intern, Oswego State Teachers College, 129 Standart St., Syracuse, N.Y.
David Rees, Division of Educational Communications, State Education Department, Albany, N.Y.
Reverend Donald J. Shea, Chairman, Physics Department, Cathedral College, 555 Washington Ave., Brooklyn 38, N.Y.
Reverend J. B. Dorsey, Dean, St. John Fisher College, Rochester 18, N.Y.
Reverend Kent Rummenie, Audio-Visual Director, Holy Cross Seminary, Dunkirk, N.Y.
Reverend Leonard Bacigalupo, President, Immaculate Conception Seminary, Vanderburgh Ave., Troy, N.Y.
Reverend William F. Lanahan, English Department Chairman, Cathedral College, 555 Washington Ave., Brooklyn 38, N.Y.
Horace B. Reynolds, Audio-Visual Director, Fredonia Central School, 330 East Main St., Fredonia, N.Y.
Vincent Rizzo, Audio-Visual Director, Niagara Wheatfield Central School, Saunders Settlement Rd., Sanborn, N.Y.
John Roach, Project Engineer - ETV Marketing, New York Telephone Co., Room 2214, 140 West St., New York City, N.Y.
William C. Rochelle, Director Audio Visual Department, Schenectady Public Schools, 108 Union St., Schenectady, N.Y.

S. N. Rosen, Vice President, Educational Technology, Inc., 258 Broadway, Brooklyn 11, N.Y.
Lester Rosenthal, Chairman, Secondary Education Department, Long Island University, School of Education, Zeckendorff Campus, Brooklyn, N.Y.
Warren A. Russell, Director of Audio-Visual Education, Kingston Schools, 46 Burgevin St., Kingston, N.Y.
Ralph M. Rourke, Assistant Director, Office of Radio-TV, New York University, Washington Square, New York 3, N.Y.
Richard W. Rundell, Audio-Visual Director, Miner Institute, Chazy, N.Y.
Francis T. Ryan, Superintendent of Schools, Beekmantown Central School, Box 891, Plattsburgh, N.Y.
William F. Ryan, Division of Educational Communications, State Education Department, Albany, N.Y.
William J. Ryan, Supervisor of Educational Communications, City School District, 90 North Main St., Gloversville, N.Y.
William A. Saulsberry, Audio-Visual Director, State University of New York at Fredonia, Fredonia, N.Y.
Howard Schivera, Audio-Visual Consultant, Baldwin School District, Baldwin Jr. High School, Pershing Blvd., Baldwin, N.Y.
Walter Schoenborn, Title III Administrator, State Education Department, Albany, N.Y.
Rae Schroeder, Education Aide, Teacher Education, State Education Department, Albany, N.Y.
Charles A. Schupp III, Coordinator Audio-Visual Aids, Veraldi Jr. High School, Middletown, N.Y.
Jerry A. Schur, Fellow of New College & Director of Audio-Visual Services, Hofstra University, 43 Barnes St., Long Beach, N.Y.
David D. Schwartz, Sales Manager, H. Wilson Corp., 546 W. 119 St., Chicago 28, Illinois
John R. Shaffer, Director Audio-Visual Services, State University of New York College, Cortland, N.Y.
Reginald G. Shaw, Supervisor of Science, Newburgh Free Academy, Newburgh, N.Y.
Wendell G. Shields, Coronet Films, P.O. Box 216, Maplewood, New Jersey
Walter E. Short, Principal Jr. High School, Knox Jr. High School, Johnstown, N.Y.
Ira J. Singer, Supervisor-Curriculum Research, Board of Cooperative Educational Services, 99 Aero Drive, Buffalo 25, N.Y.
Sister Ann Edward, Assistant Professor, St. Thomas Aquinas College, Sparkill, N.Y.
Sister Catherine Thomas, Television Coordinator - Instructor in Education & Spanish, The College of Saint Rose, Albany, N.Y.
Sister M. Antonine, Director of Teacher Education, Ladycliff College, Highland Falls, N.Y.
Sister M. Dorothy, Chairman-Art Department, Educational TV Teacher, Mt. St. Joseph Teachers College, 18 Agassiz Circle, Buffalo 14, N.Y.
Sister M. Eloise, Dean, Maria Regina College, 1024 Court St., Syracuse 8, N.Y.
Sister M. Raphael, Audio-Visual Director, Mt. St. Joseph Teachers College, 18 Agassiz Circle, Buffalo, N.Y.
Sister M. Veronice, Head, Department of Education, Maria Regina College, 1024 Court Street, Syracuse, N.Y.
Sister M. Wilhelmina, Librarian, Dominican College, Western Highway, Blauvelt, N.Y.

Sister Mary Austin, Librarian, Maria Regina College, 1024 Court St., Syracuse, N.Y.
Sister Mary Tarcisia, President, Maria Regina College, 1024 Court St., Syracuse, N.Y.
Sister Mary Timothy, Director of Student Teachers, Brentwood College, Brentwood, N.Y.
Sister Miriam Catherine, Dominican College, Blauvelt, N.Y.
Sister Regina, Professor of Education, St. Thomas Aquinos College, Sparkill, N.Y.
Sister Rose Augustine, Chairman, Education Department, Brentwood College, Brentwood, N.Y.
Frances E. Skinner, Chairman of District Audio-Visual Committee, 100 Loralee Drive, Albany 5, N.Y.
Grace L. Smith, Coordinator, Audio-Visual, Mechanicville High School, Mechanicville, N.Y.
Harley Smith, Director of Visual Aids, South Glens Falls C.S., South Glens Falls, N.Y.
Jane W. Smith, Audio-Visual Director, Westfield Acedemy & Central School, Westfield, N.Y.
Robert A. Smith, Audio-Visual Department, Eastern Camera Corp., 68 West Columbia Street, Hempstead, N.Y.
John Soergel, Director of Technical Operations-TV Radio, Syracuse University, TV-Radio Center, 107 Main Library, Syracuse, N.Y.
Richard H. Solomon, Audio-Visual Coordinator, Dryden Central School, James Street, Dryden, N.Y.
Vincent J. Spataro, Administrative Assistant, Mechanicville City School System, 6 South Main St., Mechanicville, N.Y.
Jack Spear, Special Services Section and Library for the Blind, State Education Department, Elm Street, Albany, N.Y.
O. Robert Spinks, Division of Educational Communications, State Education Department, Albany, N.Y.
Norman E. Stadler, Director, Audio-Visual Education, Orchard Park High School, Orchard Park, N.Y.
H. Gene Steffen, Director Audio-Visual Education, State University College at Buffalo, 1300 Elmwood Ave., Buffalo 22, N.Y.
Dolores Stein, Foreign Language Specialist, Clearstream Avenue School, Valley Stream, New York
Edward R. Stevens, Coordinator of Audio-Visual Services, Calhoun High School, State St., Merrick, N.Y.
Walter A. Stickney, Educational Director, Eye Gate Productions, Inc., 146-01 Archer Ave., Jamaica, N.Y.
Ralph A. Stout, Director of Audio-Visual Education, Springfield Public Schools, 32 Spring Street, Springfield, Massachusetts
Marvin Stratton, Principal, Ralph R. Smith School, Route 9G, New Hyde Park, N.Y.
Allen L. Stripp, Audio-Visual Director, Town of Webb Schools, Old Forge, N.Y.
William M. Stypowany, Director-Audio-Visual Education, Board of Education, 500 Martin Road, Lackawanna, N.Y.
Joseph V. Sullivan, Audio-Visual Consultant, Audio Visuals from Sulllvan, 29 Salem Way, Yonkers, N.Y.
W. F. Sullivan, Salesman, McGraw-Hill, 120 Washington Road, Scotia 2, N.Y.
Sherwin Swartout, Professor of Education, State University of Brockport, Brockport, N.Y.
Stanley Swick, Audio-Visual Director, Owego-Apalachin School Dist. #1, Gladden School, Owego, N.Y.

Robert Taylor, Instructional Media Consultant, Board of Cooperative Educational Services, 845 Fox Meadow Road, Yorktown Heights, N.Y.
L. K. Teubner, Principal and Graduate Audio-Visual Instructor, Westfield Public Schools, 7 Texas Terrace, Westfield, Massachusetts
John J. Thero, Teacher-Team Leader, Averill Park Central School Dist., 615 Brunswick Rd., Troy, N.Y.
Frank E. Thomas, Jr., Audio-Visual Director, Board of Cooperative Educational Services, c/o Chenango Valley Schools, MR 97, Binghamton, N.Y.
James E. Tobin, Chairman, Television Committee, Queens College, Flushing 67, N.Y.
Loran C. Twyford, Division of Educational Communications, State Education Department, Albany, N.Y.
Seymour Tyler, Sales, Micro-Link Corp., 1355 Marconi Blvd., Copiague, N.Y.
George M. Van Kirk, Audio-Visual Director, Board of Cooperative Educational Services, Sayre St., Horseheads, N.Y.
Eugene Visilew, Coordinator of Television, Harpur College, Binghamton, N.Y.
Raymond J. Vittucci, Director of Audio-Visual Education, Herkimer Junior High School, Herkimer, N.Y.
Howard M. Walker, Francis Audio-Visual Service, 108 E. Seneca Turnpike, Syracuse, N.Y.
John W. Wallace, Principal, Olean High School, Olean, N.Y.
Francis C. Washburne, Eastern Representative, Churchill; Pat Dowling Films, 60 Tohieon Place, Oceanport, New Jersey
Burt Weekes, Assistant Director-Film Distribution, Syracuse University, Collendale Campus D-7, Syracuse 10, N.Y.
John P. Westberg, High School Principal, Newfield High School, Selden, N.Y.
Gordon A. Wheaton, Superintendent of Schools, Corning Schools, 19 Lower Drive, Corning, N.Y.
James E. White, Director, Instructional Development, WNED-TV, Hotel Lafayette, Buffalo, N.Y.
Lionel L. White, Audio-Visual Coordinator, Fashion Institute of Technology, 227 West 27th St., New York 1, N.Y.
Robert C. White, Administrative Assistant for Instruction, Oneonta Public Schools, 2 Watkins Ave, Oneonta, N.Y.
John A. Whritner, Elementary Principal, Ridgeway School, Ridgeway, White Plains, N.Y.
George Wiesner, Division of Educational Communications, State Education Department, Albany, N.Y.
Norman Wilber, Sales Representative, Ray Supply, Inc., Route 2, Box 103, Mechanicville, N.Y.
Edward A. Winkler, Sales Service Engineer, Eastman Kodak Co., 200 Park Ave., New York City, N.Y.
Russell J. Wygand, Audio-Visual Coordinator, Patchogue Public Schools, Saxton St., Patchogue, N.Y.
Leon M. Wyzykowski, Elementary Principal, Fultonville School, Fultonville, N.Y.
John Yuhas, Teacher & Audio-Visual, Solvay High School, 3612 South St. Rd., Marcellus, N.Y.
Stanley S. Zamory, Director of Secondary Education, East Syracuse-Minoa Central Schools, Park Hill School, East Syracuse, N.Y.